AD-A280 771

Visual Meteorlogical Conditions (VMC) Right Turn Curved Approaches

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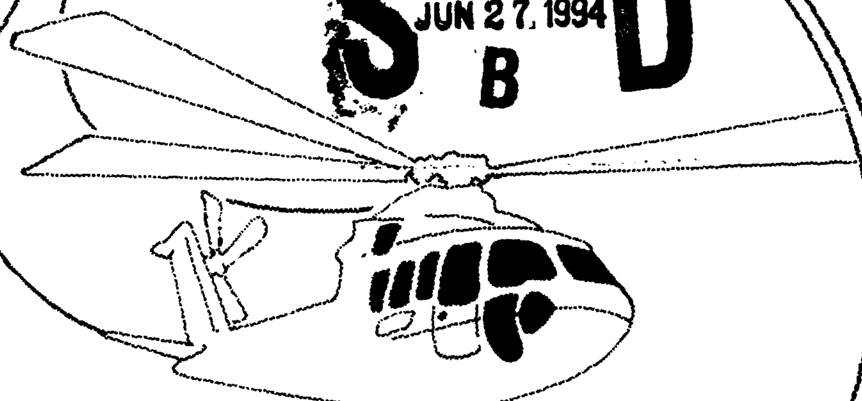

May 1994

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technical note

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16. Abstract

Flight tests using left turns to final were conducted in 1989 and 1990 at the Federal Aviation Administration (FAA) Technical Center to aid in answering questions concerning curved approaches to a heliport under visual meteorological conditions (VMC). Those questions included protected airspace within the curved segment, the most feasible angle of turn, and minimum final approach segment.

Additional tests using the FAA's Sikorsky S-76, were conducted at the FAA Technical Center in 1992 using right turn to final. Results will be used to help refine the airspace requirements for curved approaches. Three turn angles were examined, 45, 90 and 180 degrees each with three different final segment lengths, 800, 1200 and 1600 feet. A ground-based tracking system was used to track all maneuvers. This report documents the results of these flights. The test procedures, evaluation methodology, and technical and operational issues are discussed. Analysis of pilot performance, as well as pilot subjective input, are provided. Conclusions are drawn that address the airspace, turn angle, and final segment issues. The results will be considered in future modifications to the FAA Heliport Design Advisory Circular, AC 150/5390-2.

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EXECUTIVE SUMMARY

In 1989 and 1990, flight tests were conducted at the Federal Aviation Administration (FAA) Technical Center. These flights gathered data to answer questions concerning airspace requirements and obstacle protection requirements for curved approaches to heliports under visual meteorological conditions (VMC). They were conducted under the worst case scenario, using left turns to the final segment. Following the completion of those fligts, it was decided that additional curved approaches be flown using right turns to final.

Therefore, follow-on flights were carried out in the summer of 1992 to gather data that will help refine the airspace requirements for curved approaches. These flights were conducted using the FAA's Sikorsky S-76A. A total of 324 right turn approaches were completed. Each approach evaluated one of three turn angles, 45, 90, and 180 degrees and 1 of 3 final segments, 800, 1200, and 1600 feet (ft). All maneuvers were tracked by ground-based tracking systems to provide accurate, objective three-dimensional position information. Subjective data were also collected via in-flight pilot questions and a post flight questionnaire.

The in-flight answers were based on the pilot's immediate recall of what occurred during the approach. The post flight questionnaire gathered the pilot's overall opinion of the procedures.

In general, the results from these flights concur with those from the flights using left turns to final. The 45- and 90-degree turns appear to be more practical than the 180-degree turns. Both require less lateral airspace during the curved segment of the approach. Overall, however, all of the approaches using the right turns required less lateral airspace than did those using the left turns.

In addition, the 800-ft final was not as acceptable to the pilots as the 1200- and 1600-ft final segments, particularly from a passenger point of view. The objective data appear to indicate that a minimum final segment length of 1000 ft is needed when conducting right turn curved approaches.

INTRODUCTION

BACKGROUND.

At the request of the Vertical Flight Program Office, ARD-30, flight test activities have been on-going since 1986 to examine the airspace requirements and obstacle protection requirements for visual heliport approaches and departures.

The current Federal Aviation Advisory Circular (AC) 150/5390-2 states:

> The approach surface begins at the end of the heliport primary surface with the same width as the primary surface, and extends outward and upward for a horizontal distance of 4000 feet where its width is 500 feet. The slope of the approach surface is 8 to 1 for civil heliports.

This reflects the Federal Air Regulation (FAR) Part 77 requirements.

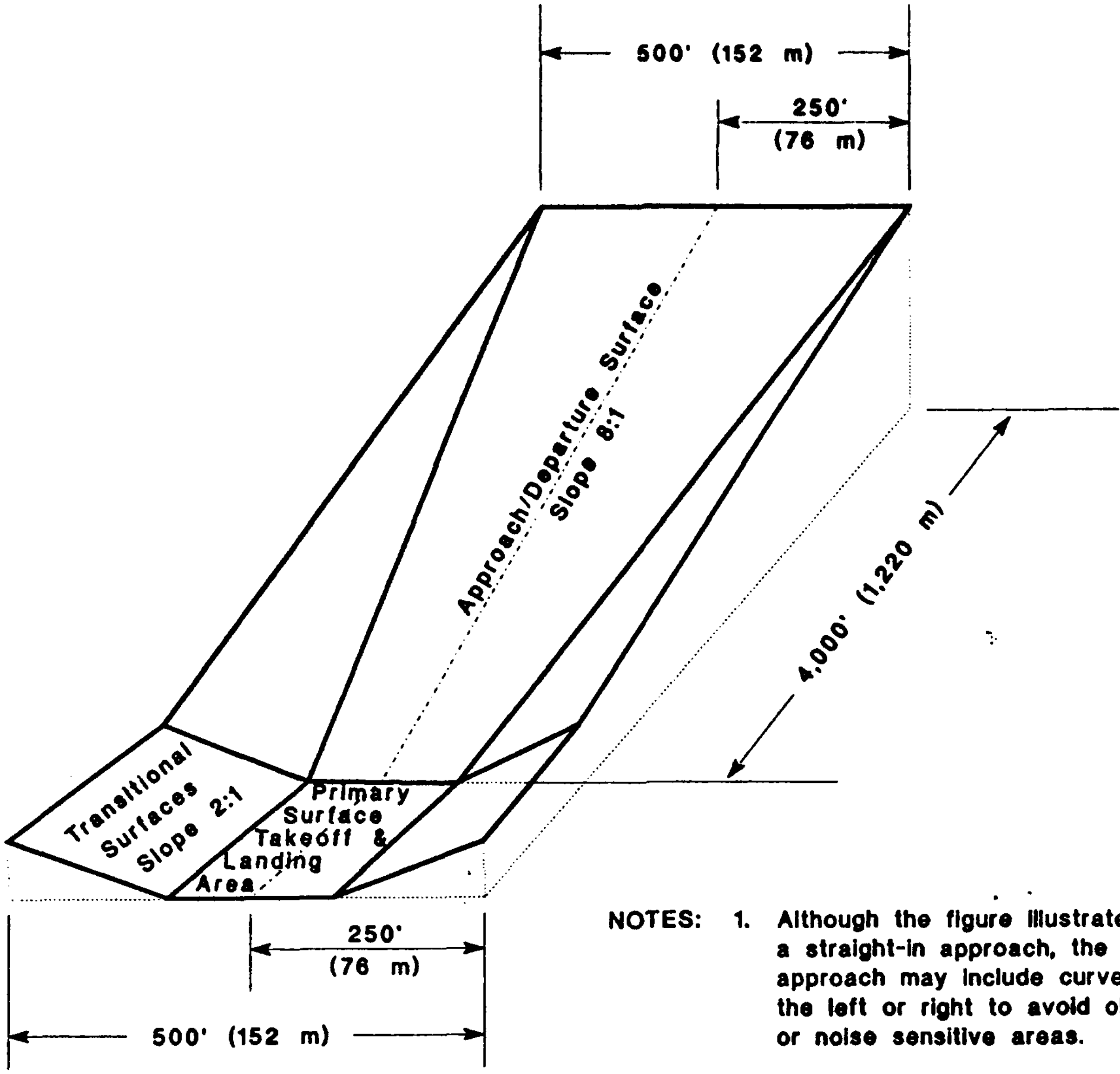
The term, primary surface, as defined in the AC is an imaginary surface which overlies the designated takeoff and landing area. The AC does allow curved approaches when necessary. Figure 1 shows these areas as they are depicted in AC 150/5390-2.

As a follow-on to previous tests conducted in 1987, the Federal Aviation Administration (FAA) Technical Center's Airborne Systems Technology Branch, ACD-330, conducted flight tests in 1989 and 1990 to examine issues specifically concerning airspace requirements and obstacle protection requirements for curved approaches to heliports. These specific tests focused on defining aspects of curved approaches, such as angle of turn to or entry into the final segment (intercept angle), and the minimal acceptable final segment length following the curved portion.

However, the 1989/1990 tests were set up to require the worst case scenario, left turns to final. Following the completion of those flights, it was decided that additional curved approaches be flown using right turns to final. Through comparisons of the data collected using right turns with data from the left turn flights, a more accurate decision can be made concerning the airspace requirements for curved approaches.

Therefore, flights were conducted at the FAA's Technical Center in the summer of 1992 to gather flight data for approaches using right turns to the final segment.

The Office of Airports Safety and Standards, Design and Operations Criteria Division, AAS-100, will use the data to help define the dimensions of the airspace to be protected within the



NOTES:

1. Although the figure illustrates a straight-in approach, the approach may include curves to the left or right to avoid objects or noise sensitive areas.
2. The primary surface is physically identical to the takeoff and landing area.

FIGURE 1. VISUAL APPROACH SURFACE

curved segment of the approach. In addition the data will help define the best possible angle of intercept and the minimal straight final segment length.

OBJECTIVES.

The flight test objectives were to determine:

a. The airspace consumed in the curved portion of right turn VFR approaches to a heliport.

b. The minimal straight final segment following the curved portion of the approach.

c. The dispersions in flight paths for both the lateral and vertical planes throughout the entire curved VFR approach.

d. The best possible angle of entry or intercept angle to the final straight segment.

These objectives were studied using both objective methods (statistical analysis) and subjective methods (pilot questionnaires).

METHODOLOGY

TEST LOCATION.

The flights were conducted at the FAA Technical Center's National Concepts Development and Demonstration Heliport from July 1992 through August 1992. All approaches remained within a 2 nautical mile (nmi) radius of the heliport.

FACILITIES AND INSTRUMENTATION.

AIRCRAFT. The FAA's Sikorsky S-76A was used for these flights. This particular helicopter is a twin engine, single main rotor helicopter designed to carry a pilot and up to five passengers. It is capable of speeds up to 155 knots (kts), has a maximum takeoff weight of 10,300 pounds (lbs), and a main rotor diameter of 44 feet (ft). This aircraft is certified for single pilot Instrument Flight Rules (IFR) operations and is representative of IFR certified transport helicopters currently in use. During the test flights, it was flown under VFR. The helicopter's gross weight was maintained between 9000 and 10,000 lbs during the test flights.

GROUND TRACKING. Two different ground-based radar tracking systems were used to provide the aircraft's position during the approaches. The two systems were the GTE Sylvania Precision Automated Tracking System (PATS) and the VITRO RIR778 Tracking Radar.

GTE Sylvania PATS. This system measures azimuth (AZ), elevation (EL), and range, automatically, by transmitting a laser pulse to a target on the aircraft and measuring the angle of return and round-trip time. The angle coverage for the AZ is 540 degrees, and for EL, it is .5 to 85 degrees. The angle accuracy or maximum error for both AZ and EL is 20 arc seconds at all ranges. The maximum reliable range coverage is 25 nmi. Accuracies are 1 ft for target ranges up to 5 nmi, 2 ft for target ranges of 5 nmi to 10 nmi, and 3 ft for target ranges of 10 to 25nmi. The system is capable of tracking an aircraft from takeoff through touchdown. However, because of visibility conditions, the operational range is limited at the Technical Center to ranges of 7 to 10nmi.

VITRO RIR778 Tracking Radar. This system uses a NIKE Hercules radar antenna. It is capable of operating either in beacon (cooperative) mode or in skin paint mode. It is calibrated to a one-sigma bias error of uncertainty envelope of 0.014 degrees in AZ and EL. One-sigma range errors are 3.3 meters for the beacon mode and 6.0 meters for the skin paint mode. The standard deviation of short term variations or jitter is within 0.009 degrees for both AZ and EL, and within 3.0 meters for range. The beacon mode was used for these flights.

TEST PROCEDURES.

FLIGHT PROCEDURES.

Each flight consisted of 18 approaches. Each approach evaluated one of three intercept angles, 45, 90, and 180 degrees and one of three final segments of 800, 1200, and 1600 ft. Thus 9 run profiles were established and each was flown twice on a flight. Figure 2 shows each profile. In order to maintain a constant 10 degree final descent angle on each of the three final segments, each final segment began at a different altitude. Table 1 provides, for each run, a listing of each intercept angle and the final segment length and the altitude following the turn. Pilots flew either one or two flights depending on time and weather constraints.

Each curved approach began at 500 ft above ground level (AGL). A safety pilot guided the subject pilot to a position that set up one of the nine types of runs. The position at which the curved portion began was determined by surveyed ground locations. This aircraft position was either on the downwind or base leg of the approach. Using additional surveyed ground points, the subject pilot was instructed by the safety pilot when to start the turn to the final approach segment. The subject pilot flew the approach from the beginning of the turn to touchdown via visual references only.

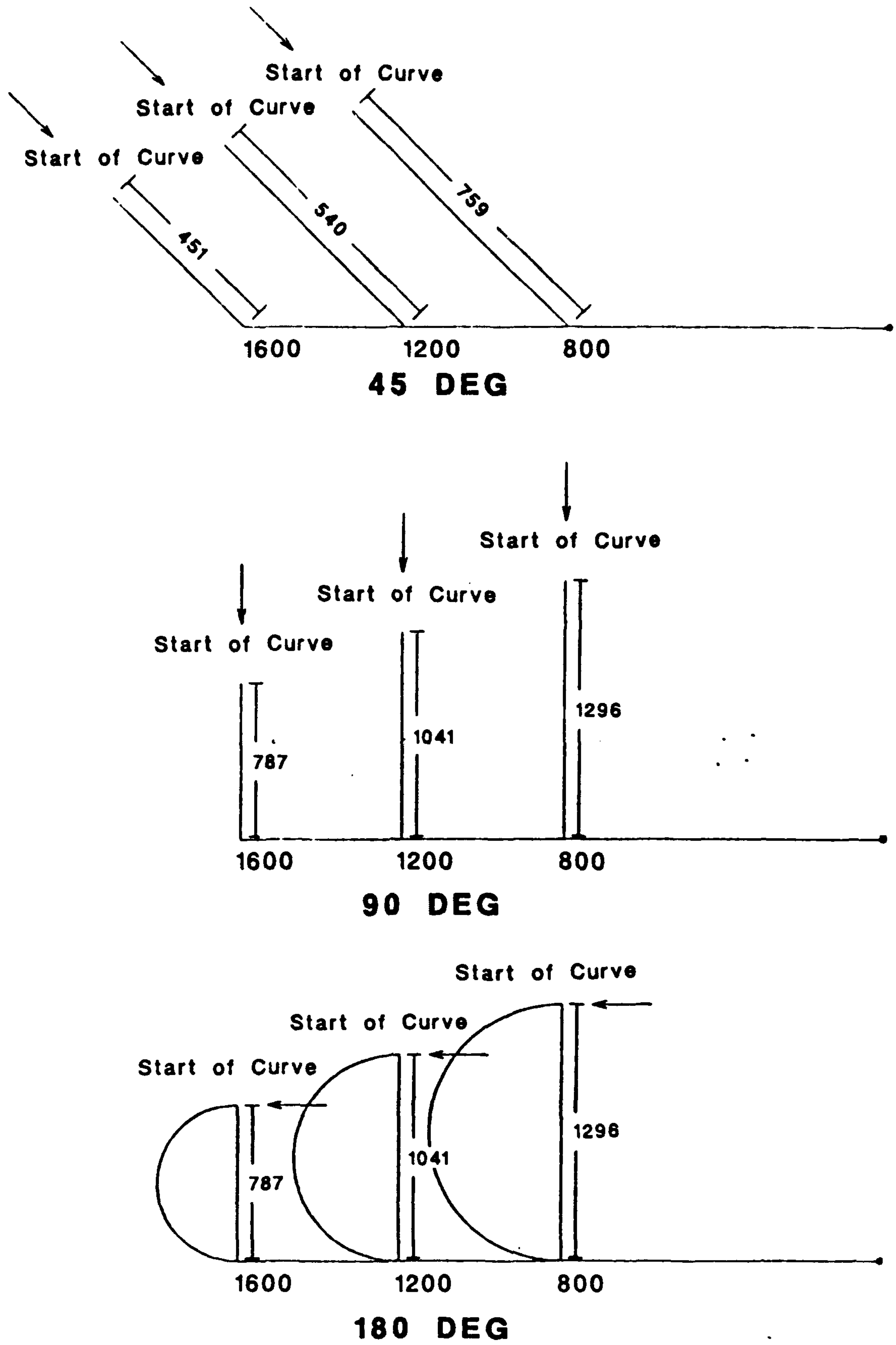


FIGURE 2. FLIGHT PROFILES

Table 1. Flight Test Matrix

Run Number Segment	Lateral Intercept Angle	Final Segment Length (ft)	Altitude at Start of Final
1,10	45	1600	282
2,11	45	1200	216
3,12	45	800	141
4,13	90	1600	282
5,14	90	1200	216
6,15	90	800	141
7,16	180	1600	282
8,17	180	1200	216
9,18	180	800	141

The safety pilot called out maximum bank angles during the turn and altitude upon final segment fix for data collection purposes only.

Following each curved approach, the subject pilot was asked to rate the maneuver in terms of safety, workload, and controllability using the Modified Cooper Harper Rating Scale. A copy of this scale is found in figure 3.

SUBJECT PILOT BRIEFINGS.

The objectives of the flight tests and the flight procedures were explained to each subject pilot during a preflight briefing. Also, during this briefing, the use of the Cooper Harper Rating Scale for the in-flight post-maneuver questions was explained to the subject. In addition, the briefing explained; the responsibilities of each crew member (subject pilot, safety pilot, and technician), local area conditions and aircraft information.

Following the briefing, each subject pilot was familiarized with the curved approach routes.

SUBJECT PILOTS.

Eighteen pilots with diverse rotorcraft operations background, from the private sector, military, and the FAA participated in these tests. This diversity of experience is representative of the rotorcraft industry at large. Table 2 presents a listing of the experience/affiliation of the subject pilots. Their flight experience is shown in table 3. Their helicopter experience ranged from 200 to 8000 total hours, from 50 to 2600 hours in type, and from 10 to 250 hours in the past six months. The median number of total helicopter hours was 3850 hours. The median number of time-in-type hours was 1010, and for time over the past 6 months the median was 100 hours. This indicates that

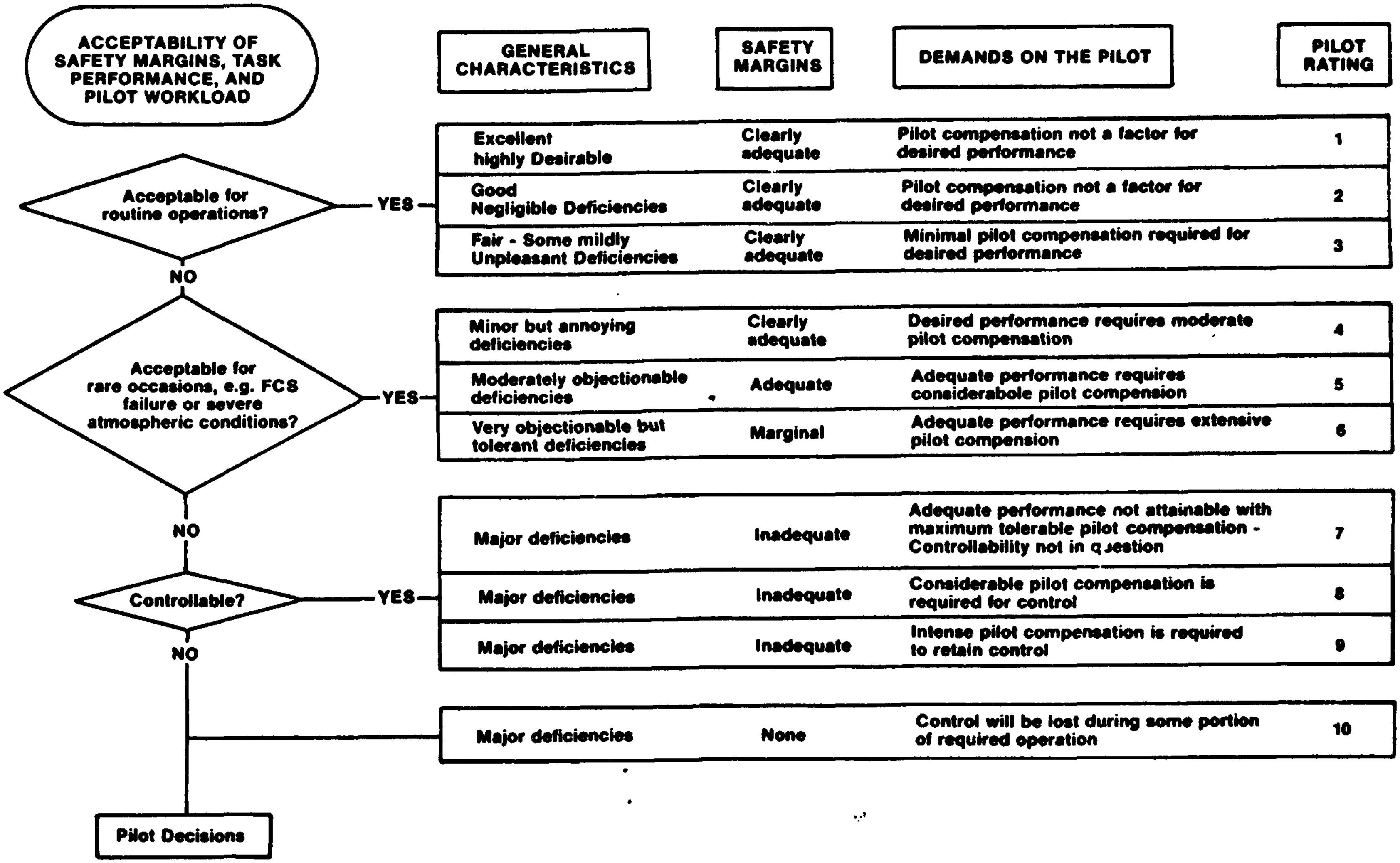


FIGURE 3. MODIFIED COOPER-HARPER RATING SCALE

Table 2. Subject Pilots By Experience and Affiliation

S-76

Number of Pilots	Affiliation	Experience
2	FAA	FAA + Industry
1	FAA	FAA + Military
1	Military	Military + Industry
1	State Government	State Government
1	State Government	State Government + Industry
2	Industry	Industry
10	Industry	Industry + Military

Table 3. Subject Pilot Experience

S-76 Subjects

Total Flight Hours	Number of Pilots
0-500	0
501-1500	0
1501-3000	3
> 3000	15

Total Helicopter Hours	Number of Pilots
0-500	1
501-1500	2
1501-3000	4
> 3000	11

Total Time in Type	Number of Pilots
0-500	6
501-1500	6
1501-3000	5
> 3000	0

Total Helicopter Hours Last 6 Months	Number of Pilots
< 10	0
10-50	5
> 50	13

most of these subject pilots were fairly well experienced helicopter pilots and were also experienced in type. This would be typical of the pilots flying corporate or commercial helicopter operations in the field.

DATA PROCESSING AND ANALYSIS

SOURCE OF DATA.

Test data came from four sources: in-flight subject pilot Cooper-Harper ratings of each procedure, a data technician's log, post flight subject pilot questionnaire and ratings, and laser and/or NIKE tracking tapes.

Each of these sources is explained in more detail in the following sections.

IN-FLIGHT PILOT RATINGS. Immediately following each approach, the subject pilot was asked to rate the maneuver in terms of safety, workload, and controllability. This questionnaire was designed to provide immediate subject response. These ratings were recorded on the flight log by the flight data technician.

DATA TECHNICIAN'S LOG. The flight data technician was responsible for filling in a log during each flight. The subject pilot's name, flight date, start time for the run, start/stop times for each curve, and time of touchdown were recorded. Additional information included subject pilot comments, wind conditions, angle of bank during the turn, and altitude upon beginning the final segment. A sample flight log can be found in appendix A.

POST FLIGHT QUESTIONNAIRE. At the conclusion of the flight the subject pilot was asked to complete a post flight questionnaire. Appendix B contains a sample post flight questionnaire. Unlike the in-flight questionnaire, this questionnaire was designed to provide comparative subject pilot measures across all test profiles. It required the subject pilot to provide an overall rating for each type of curve, as well as rating for each curve in terms of safety, control margin, and pilot workload and desirability. In addition each subject pilot was asked to rate each final segment length in terms of safety, control, workload, and desirability. Finally the post flight questionnaire required a rating for each combination of intercept angle and final segment. Pilot background information such as number of flight hours and aircraft experience was also collected. The subject pilots were encouraged to include any comments they might have about the procedures.

TRACKER DATA. The NIKE and Laser tracker tapes contained data that had been converted from slant range, azimuth, and elevation to X, Y, and Z coordinates (using the Technical Center Tracking Coordinate System) by the Technical Center's Honeywell 66/60

facility. The tapes were then converted from Honeywell format to VAX/VMS format for further data processing on ACD-300's VAX computer. The origin of the tracker data was translated to the center of the landing area with the X and Y axis running through the landing areas's center point. The X-axis is in-line and positive on the approach side of the landing point and negative beyond the landing area. The Y-axis is perpendicular to the X-axis through the landing point and within the plane of the landing area. The Y-axis is positive to the right of the approach centerline and negative to its left. The Z-axis is drawn perpendicular to the X-Y plane at the landing point of intercept, positive above and negative below the landing point (see figure 4). Ground tracking data were used to generate plots depicting both plan and profile views of each flight test procedure relating to the desired curved approach. Tracking of each approach began prior to the curved portion and continued through termination at the heliport.

ANALYSIS PROCEDURES.

FLIGHT DATA. Flight data were provided from two possible sources: the laser and/or NIKE tracker tapes, and the data technician's flight logs. The data technician's logs chronologically listed specific events that occurred during the various procedures, along with other supporting information as previously discussed.

DATA PARTITIONING. In order to perform the required statistical analysis it was necessary to partition, or bin, the data. Data along the straight and curved segments of the flight test paths were projected onto the corresponding slant range segment. The data were binned along these projected paths, by range for the straight segment, and by angle for the curved segment.

All horizontal and vertical binning for the straight segment was begun with the leading edge of the helipad as the first bin or bin zero. Bin ranges for other bins along the straight segment were calculated as follows:

$$BRn = BRo + (100 \times COS(10) \times BNn)$$

where BRn is the nth bin range in ft, BRo is the bin range for the initial bin, bin zero in ft, 100 is the partition interval in ft, COS(10) is the cosine of the 10 degree approach path, and BNn is the nth bin number.

Along the straight segment, this procedure was performed for altitude, along-track velocity, altitude error, and crosstrack error. The altitude and radial errors along the curved segment were computed by subtracting the aircraft's planned position from its actual position., i.e., planned position in Z versus actual Z or planned position in Y versus actual Y.

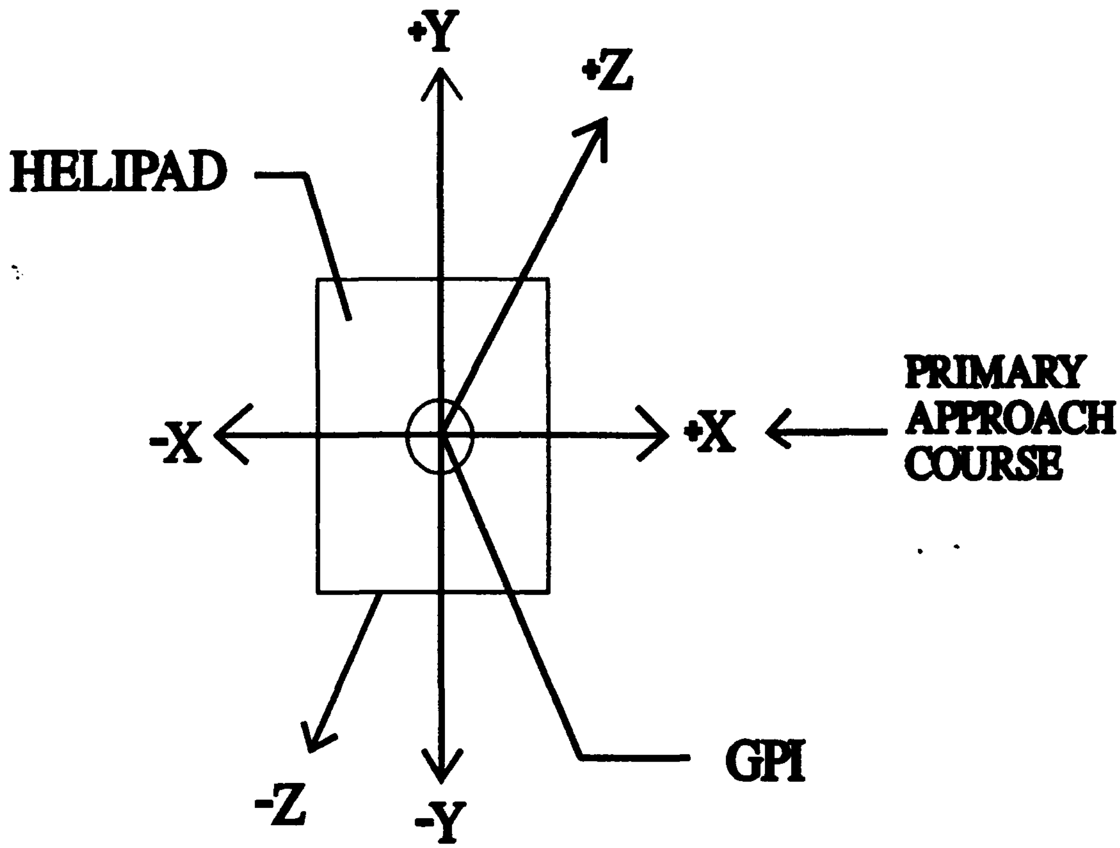


FIGURE 4. RECTANGULAR COORDINATE REFERENCE SYSTEM

The binning of the curved segments began from the end of the curved paths. These bins were calculated as follows:

$$BRAn = BRAo + \frac{(100 \text{ X } COS(10) \text{ X } BNRAn)}{R}$$

where BRAn is the nth bin portion of the curved path segment in degrees, BRAo is the bin angle for bin zero in degrees, BNRAn is the nth bin number for the radial, 100 is the arc partition distance or interval on the curved path in ft, COS(10) is the cosine of the 10 degree approach path, and R is the radius of the appropriate curve in ft.

Along the curved segment, this procedure was performed for altitude, vertical velocity, along path speed, altitude error, and radial error.

STATISTICS. Statistical calculations were performed on the binned data. For each bin, the parameters of interest were the number of data points (N), the arithmetic mean, and the unbiased estimate of standard deviation, skewness, and kurtosis. The first four moments about zero were calculated to aid in the computations of skewness and kurtosis. The formulas for skewness and kurtosis are as follows:

Third moment (skewness)

$$a_3 = 1/N \quad f(\ (x-x)/s\ )^3$$

Fourth moment (kurtosis)

$$a_4 = 1/N \quad f(\ (x-x)/s\ )^4$$

Further discussion of these statistics can be found in Elements of Statistics by Elmer B. Mode, Prentice Hall, Inc., NJ, 1961

Results of these statistical calculations can be found in appendix C.

PLOTTING. All plotting for this project was accomplished using a California Computer's Calcomp 1051 plotter using Calcomp 907 software for the VAX 11/750 computer. The plots generated fall into three categories: flight data plots, statistical data plots, and subjective pilot response plots. These plots were produced to help answer the questions raised in the objectives, as well as to provide a pictorial presentation of the flight data.

FLIGHT DATA PLOTS. Two classes of plots were prepared from the tracker data. The first graphically depicts lateral deviations versus range from the heliport. The second depicts vertical deviations versus range. These plots were prepared in two ways, individual and composite.

Individual Plots. The individual plots were prepared on a per run basis. Individual X-Y plots were generated for

crosstrack in feet versus range in feet, and Z-Y plots for altitude versus range in feet. The individual plots were used to determine if valid tracker data were obtained for the run. Figure 5 presents a sample of these plots.

Composite Data Plots. Subject pilot group performance is shown in the composite approach plots. Lateral and vertical view composite plots were generated for each combination of turn angle and final segment length. Figures 6 and 7 show a sample of the composite plots. The composite plots can be found in appendix D.

STATISTICAL PLOTS. A graphical presentation of the results of the statistical analysis was produced using four and six sigma isoprobability contours. The statistics parameters plotted along the Y-axis for the curved portion, were altitude, vertical velocity, along path speed, altitude error, and radial error. On the final segment, the parameters plotted were altitude, along track or straight-in velocity, crosstrack error, and altitude error.

The X-Axis for the curved portion was the angular position or the position in the curve in degrees. For example, the angular bin position of 20 degrees indicates the pilot was 20 degrees into the turn, thus a bin position of 90 degrees for a 180-degree turn indicates the pilot was half way through the turn.

The X-axis for the final segment was distance from the heliport in ft.
One set of these plots show the mean value plus and minus four standard deviations, while a second set shows mean plus/minus six standard deviations. All points are plotted against their corresponding bin ranges or bin angles. Statistical plots can be found in appendix E.

PILOT RESPONSE PLOTS. Plots were also produced for the in-flight and post flight ratings.

In-Flight Questionnaire Data Plots. Plots were produced showing the distribution of the Cooper-Harper in-flight ratings for safety, workload, and controllability. The plots of this data can be seen in appendix F.

Post Flight Questionnaire Data Plots. These plots show the distribution of responses for each question. They can be found in appendix G.

RESULTS

DATA PLOTS.

COMPOSITE PLOTS. The composite plots were produced for the lateral, as well as vertical, views to determine how well the pilots as a whole performed along both the vertical and lateral

8/12/92 PM S-76 CURVED APPROACH DATA
RUN TYPE : (90 DEG., 800 FT.)
RUN #6

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N.J. 08405
13-AUG-1992 11:18:18

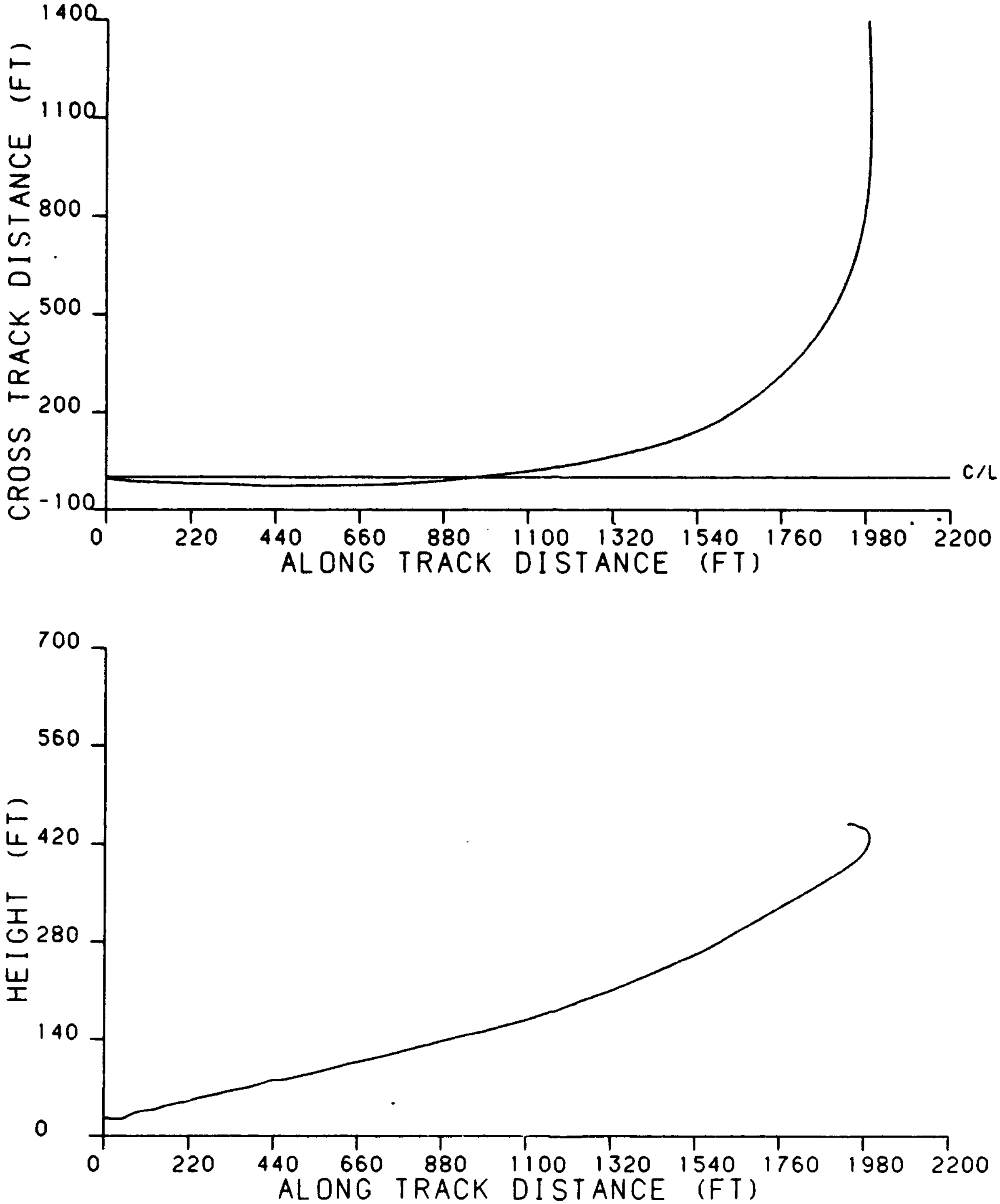


FIGURE 5. SAMPLE INDIVIDUAL PLOT

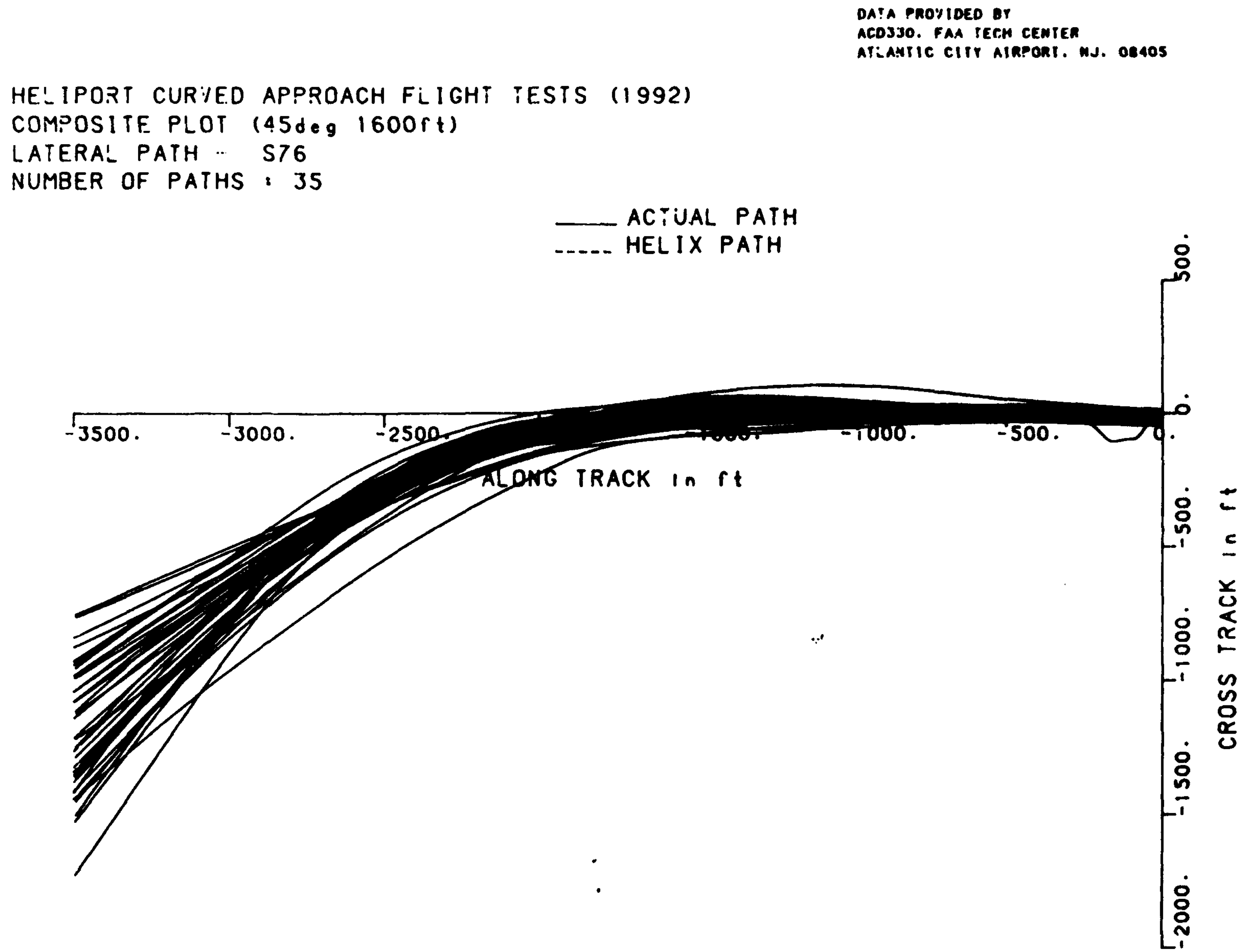


FIGURE 6. SAMPLE COMPOSITE PLOT, LATERAL VIEW

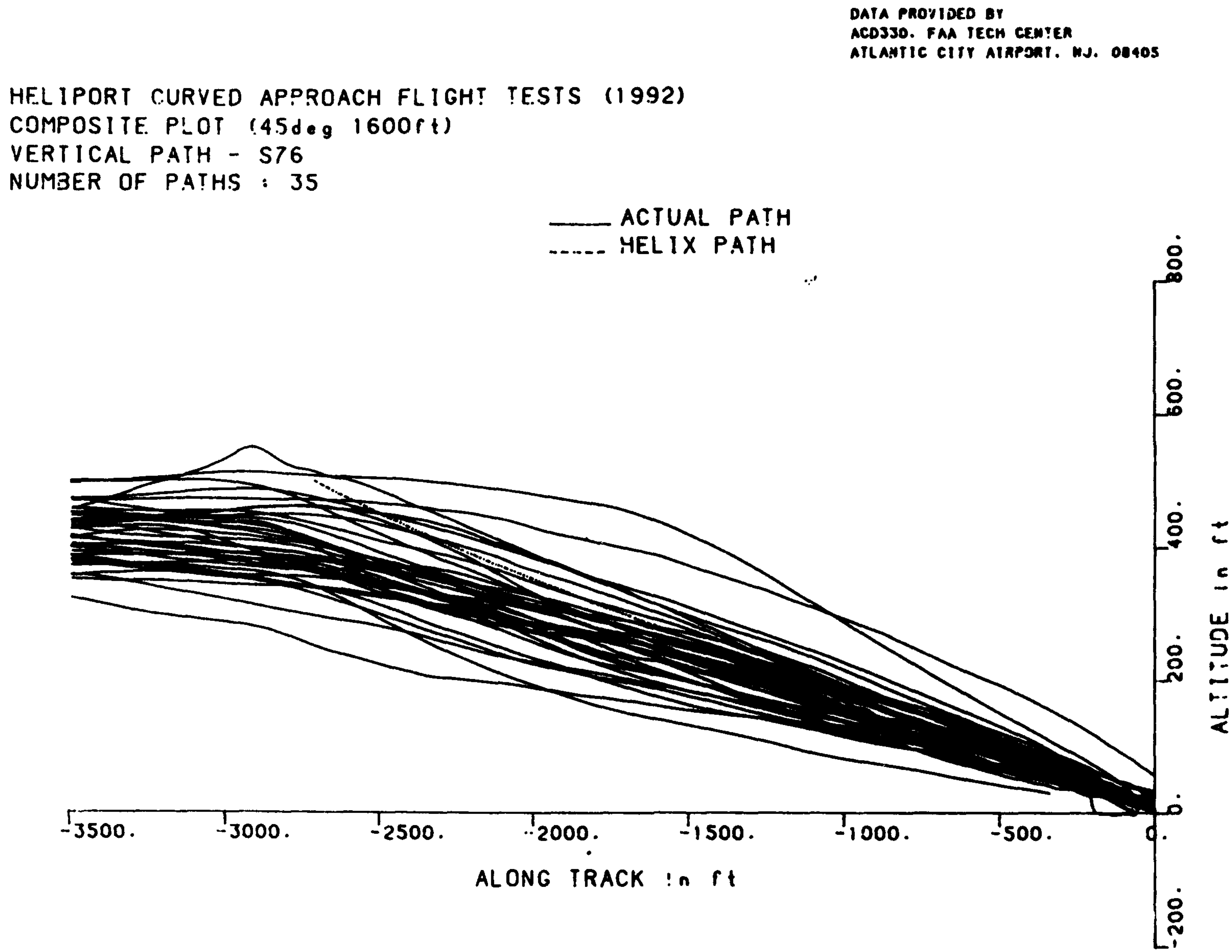


FIGURE 7. SAMPLE COMPOSITE PLOT, VERTICAL VIEW

path. They were analyzed by type of turn for closeness to the planned path.

Lateral View. With two exceptions, the pilots' actual lateral flight paths for the 45 degree turns, with the 1600 and 800 foot final segments, tended to be centered around the desired path for the entire approach. Those for the 45 degree with a 1200 foot final tended to be on the outside of the curve for the first third of the turn but were centered around the desired path for the remaining portion of the approach. These paths had a smaller spread during the curved segment than did the 90 and 180 degree turns. However, the dispersions of all final segment paths for all 3 turns were very small. The dispersions of the final segment paths for the 90 degree turns appear to be the least. The dispersions of the actual flight paths for the curved portion of the 90-degree turns were somewhat wider than with the 45-degree turns, with those for the curved segment for the 90 degree/800ft final having the widest dispersion. The curved segment paths for all the 180-degree turns were more widely dispersed than those for the 45- and 90-degree turns. With the 180-degree turns the paths with the 1600-ft final were not as dispersed as those with the 1200- and 800-ft finals. All but a few of the curved paths for the 180 degree turns were outside the desired path, but, with one or two exceptions, all were on the desired lateral path by about 1000 to 1500 ft from touchdown.

The observed offsets during the curved portion of the approaches are most likely due to the following:

a. There were no highly visible ground references to aid the pilot in maintaining the track.

b. With the 180-degree turns, the pilots were influenced by the high bank angles to maintain track and therefore, flew wide.

Vertical View. Examination of the vertical view plots for all 3 turn angles reveal that most of the pilots began their approach below the desired course. This is probably due to a lack of control on the actual entry altitude. However, these plots indicate that the majority of the pilots tended to maintain a fairly constant descent angle down to a point just prior to the 300 ft range from touchdown. By that point, they had corrected the approach to be on or above the desired track. That is, those who began above the desired course tended to stay above, and those who began below tended to stay below until just prior to a point that was approximately 300 ft from touchdown.

This is in direct contrast with the paths seen during the left turn approaches. With the 45- and 90-degree left turns, the pilots attempted to return to the desired altitude approximately by the end of the curve, just prior to the beginning of the final

segment, while with the 180-degree turns, they tended to drop below the desired surface.

Overall. The pilots, when performing approaches with the 1600- and 1200-ft finals, came out of their turns close to the desired segment lengths. However, when flying the approaches with the 800-foot final segment, the pilots tended to come out of their curve approximately 1000 ft from touchdown, regardless of turn angle. This performance indicates that the subject pilots could not conform to the requested 800-ft final segment.

Of the 3 turn angles, the 180-degree turns appear to consume the most airspace laterally, while the 45-degree turns had a much smaller lateral dispersion.

The vertical airspace consumed during both the curved and straight segments, for all three type approaches, appears to be as large as 300 ft.

The small dispersions seen during the final segments for these right turn approaches reflects what was seen with the left turn approaches. However in contrast with the right turns, the pilots tended to come out of the turns anywhere from 1000 to the required 1600 ft from the touchdown point, while with the left turns, they tended to come out of their turns approximately 1200 ft from the touchdown point, regardless of the desired final segment distance. It would seem the pilots had less of a problem with the shorter final segment when using right turns to final than with the left turns to final. However, with both type turns the performance data appear to indicate the pilots were not completely comfortable with the 800-ft final segment.

Again, as found with the left turn flights, the ten degree requested approach slope was flyable with the three turn angles and final segments.

STATISTICAL PLOTS. The statistical plots, corresponding to the statistical data found in appendix C, were analyzed to determine the airspace consumed in the lateral and vertical perspective.

Lateral Variations. The plots of the lateral variation for the curved segments (radial error) for the 45-degree turns revealed smaller lateral variations than those for the other two turn angles. However, the wider variations for the 180-degree turns were exhibited only during the middle third of the curve. In contrast, the envelopes of the 45-degree turns with 1200- and 800-ft finals and all 3 of the 90 degree turns were approximately constant through the first two-thirds of the turn while in the final third the envelopes narrowed, like a funnel. The envelope for the 45-degree turn with the 1600-ft final was the smallest of all and remained constant throughout the curve. The maximum widths of the 6 standard deviation envelopes for the 45- and 90-

degree curves, for all 3 final segments, calculated from the statistical listings, varied from a width of approximately 700 ft to a width of 1900 ft. For the four standard deviation envelopes the maximum widths for these two curves varied from 450 to 1300 ft. With the 180-degree turns the maximum 6 standard deviation envelopes varied from 1800 to 2820 ft and from 1200 to 1880 ft for the 4 standard deviation envelopes.

The constant envelopes seen for the 45-degree turns are consistent with what would be expected during normal operations.

With the exception of the envelope for the 90-degree turns with 1200-ft final, all the right turn envelopes are smaller than those seen with the left turns. The differences between the envelopes plotted for the left versus right are as large as 600 ft with the 4 standard deviation envelopes and as large as 800 ft with the 6 standard deviation envelopes.

Again, as with the left turn approaches, there were no obstacles in the testing area. Therefore the large lateral variations seen during the curved segment would most likely be much smaller if visual references, such as obstacles, were available.

The lateral variation plots for the straight, i.e., crosstrack error, are all shaped like funnels with widths at the widest end, the beginning of the straight segment, varying from 300 to 925 ft for the 6 standard deviation envelopes, and from 200 to 615 ft for the 4 standard deviation envelopes. At the smallest end, the portion of the final segment closest to the touchdown point, the widths varied from 200 to 275 ft and from approximately 130 to 180 ft for the 6 and 4 standard deviation envelopes respectively. All envelope widths were calculated using data from the statistical listings found in appendix C.

With the exception of the envelope for the 180 degree 1600 ft final, the crosstrack envelopes for the right turn approaches were smaller than those seen with the left turn approaches. The differences were as large as 175 ft for the 4 standard deviation plots and 275 ft for the 6 standard deviation plots. These figures represent the widths from the center of the helicopter.

A summary of these envelope widths, as calculated from the data in appendix C, can be found in tables 4 and 5. Table 4 presents 4 and 6 times the largest observed deviation, along with the position in the turn where that deviation occurred. Table 5 presents the largest deviation at the beginning and end of the straight segment. Appendix H contains a comparison of the left turn envelopes with the right turn envelopes.

Table 4. Summary Table for Radial Errors 4 and 6 Standard Deviation Envelopes

Estimated Largest Deviation (in ft)/Position in Turn (degree)

Turn Angle	Final Segment 800	Final Segment 1200	Final Segment 1600
	+- 4 Standard Deviations		
45	+- 380/12	+- 325/10	+- 225/5
90	+- 605/10	+- 650/30	+- 425/35
180	+- 850/90	+- 940/90	+- 600/100
	+- 6 Standard Deviations		
45	+- 575/12	+- 480/10	+- 350/5
90	+- 905/10	+- 950/30	+- 650/35
180	+-1275/90	+-1410/90	+- 900/100

Table 5. Summary Table for Crosstrack Errors 4 and 6 Standard Deviation Envelopes

Estimated Maximum Deviation (in ft)
Widest Portion/Narrowest Portion

Turn Angle	Final Segment 800	Final Segment 1200	Final Segment 1600
	+- 4 Standard Deviations		
45	+-100/+-70	+-135/+-90	+-155/+-90
90	+-110/+-65	+-150/+-75	+-150/+-65
180	+-155/+-75	+-145/+-75	+-305/+-75
	+- 6 Standard Deviations		
45	+-150/+-100	+-210/+-135	+-230/+-130
90	+-170/+-100	+-225/+-115	+-225/+-100
180	+-230/+-115	+-215/+-115	+-460/+-115

Vertical Variations. As seen with the composite plots, the statistical plots for altitude and altitude error also reveal that, at the beginning of the turn, the pilots tended to be below the requested 500 ft starting altitude. The plots of the mean altitudes for the 45- and 90-degree approaches reveal more of a constant descent during the turn than those for the 180-degree approaches. The altitude error plots for the 45- and 90- degree curves also show there is a tendency for the pilots to hold a

near constant angle of descent with a slight tendency to improve toward the desired path as the turn progressed.

Four standard deviations about the mean takes in the airspace down to approximately 50 to 100 ft above ground for the curved portion. With six standard deviations about the mean, the airspace must be protected down to the ground.

The altitude and altitude error plots for the straight segment reveal that, at the beginning of the final segment, the pilots were at or just above the desired altitude and remained so through touchdown. Both the four and six standard deviation envelopes take in the airspace all the way to the ground.

Velocity Plots. Mean vertical velocity and lateral speeds, or along path and along track speeds, were within the expected limits. During the curved segment the mean descent rates were less than 800 ft per minute for the 45- and 90-degree approaches. With the 180-degree approaches the descent rates increased noticeably in the middle of the turn, and then tended to decrease to a rate of less than 800 ft/minute. During the curved segment of the 45- and 90-degree approaches, the forward speeds averaged between 55 and 70 kts. With the 180-degree turns there was a noticeable change in forward speeds during the middle portion of the turn. On the final segment the pilots average closure rate was between 30 and 50 kts for all approaches. These speeds indicate that no unusual velocity changes were needed to complete the maneuvers, particularly for the 45- and 90-degree turns. The descent rates were consistent with good piloting technique, providing for adequate controllability, passenger comfort, and airspeed in reserve for any unplanned events. Since there were no obstacles in the approach area, it should be noted that these speeds may change under more restricted conditions. These plots are found in appendix E.

ON-BOARD OBSERVATIONS.

Bank angles for each turn were recorded by the flight data technician. For the 45-degree turns, bank angles ranged from 5 to 30 degrees with more than 85 percent greater than 10 degrees. These angles can be considered acceptable for normal operations. With the 90-degree turns, bank angles ranging from 12 to 45 degrees were observed. Approximately 85 percent of those bank angles were from 12 to 30 degrees with 5 percent greater than 40 degrees. Bank angles as large as 50 degrees were seen with the 180-degree turns. More than half of the angles with the 180-degree turns fell between 20 and 35 degrees with 3 percent of the bank angles larger than 46 degrees. These large angles of bank are most likely due to the tight radius of turn for the 180-degree turns with the 1600- and 1200-ft final segments and the occasional crosswind conditions.

The bank angles seen with the 45-degree turns are similar to those seen with the left turn data, while those seen with the 90-degree turns were slightly larger. Similarly the bank angles seen with the right turn 180 degree turns were also slightly larger than those seen with the left turns.

IN-FLIGHT PILOT QUESTIONNAIRE.

The in-flight questions provide pilot responses immediately following each procedure to gather subjective input concerning the acceptablility of each procedure in terms of safety, controllability, and workload.

The Cooper-Harper Pilot Rating Scale used for the in-flight questionnaire employs a one to ten scale. A rating of one to three indicates the maneuver is fully acceptable for routine operations. Ratings of four, five, or six indicate the pilot felt the maneuver would be acceptable only on occasion, there were more deficiencies and the safety margin deteriorated. A rating greater than six indicates the subject felt the maneuver should seldom, if ever, be attempted.

Overall, there were 36 maneuvers for each combination of intercept angle and final segment.

To further aid in the analysis, the ratings were grouped into three major categories; from one to three, four to six, and greater than six. These groupings are based on the breakdowns given on the Cooper Harper Rating Scale as seen in figure 3. Table 6 presents the break down of the number of ratings in each group for each factor.

Plots of the in-flight ratings are found in appendix F.

Safety Margin. The figures in appendix F, pages F1 through F9 present the results for safety margin for the 45-, 90-, and 180-degree turns for all three final segment lengths.

At least 86 percent of the ratings of the safety margin with the 45- and 90-degree angles of intercept for all three final segments fell in the acceptable category. In contrast, at most, 73 percent of the safety margin ratings for the 180 degree turns, regardless of the final segment, fell within the acceptable category. That is, the 45- and 90-degree turns, regardless of final segment length were rated noticeably better than the 180 turns regardless of final segment length. Further examination of the plots reveals there were many more ratings of 1's for the 45-degree turns than for the 90-degree turns and significantly more ratings of 1's for the 90-degree turns than for the 180-degree turns. However, the ratings within each angle intercept group for each final segment were not significantly different.

Table 6. Distribution of In-Flight Ratings

Procedure	WORKLOAD Group 1	2	3	SAFETY Group 1	2	3	CONTROL Group 1	2	3
	Number of Responses								
45°,1600'	35	1	0	35	1	0	35	1	0
45°,1200'	35	1	0	34	2	0	36	0	0
45°, 800'	32	4	0	32	4	1	33	3	0
90°,1600'	35	1	0	35	1	0	36	0	0
90°,1200'	33	3	0	33	3	0	34	2	0
90°, 800'	31	5	0	31	4	1	33	3	0
180°,1600'	23	13	0	25	11	0	27	9	0
180°,1200'	26	10	0	26	10	0	26	10	0
180°, 800'	30	6	0	26	10	0	30	6	0

Group 1 = acceptable procedure for routine operations (ratings of 1-3)
Group 2 = acceptable only on occasion, ratings of 4 to 6
Group 3 = inadequate safety margin and major deficiencies, ratings >6

Workload. The figures found in appendix F, pages F10 through F18 present the plots of the ratings for all 3 intercept angles and final segments. As seen with the safety margin ratings, at least 86 percent of the ratings for the 45- and 90-degree turns for all 3 final segments fell within the acceptable category. For the 180-degree turn with the 800-ft final, 82 percent of the ratings were in the acceptable group while, at most, 72 percent fell into the acceptable group for the 180-degree turns with 1600- and 1200-ft finals.

However, there were noticeably more ratings of 2's and 3's for the 180 turns regardless of final segment. In addition, there were more ratings of 1's for the 45-degree turns than for the 90-degree turns, regardless of final segment. Although the ratings for the 45- and 90-degree turns were similar, the increase in the number of 2's and 3's from the 45 to the 90 and to the 180-degree turns reveals the pilots felt there was an increase in workload (decrease in acceptability) as the angle of intercept increased.

Control. The figures found in appendix F, pages F19 through F27 show the tabulation of the ratings for the controllability for all three intercept angles for all three final segments. As seen with the safety and workload ratings, these ratings also tend to fall within the acceptable category for the 45- and 90-degree turn angles. However, there were more ratings of 2's and 3's for the 90-degree turns than for the 45-degree turns. Again, there were fewer ratings falling in the acceptable category

(ratings of 1, 2, or 3) for the 180-degree turns. At least 91 percent of the ratings fell in the acceptable range for the 45- and 90-degree turns, regardless of final segment. In contrast, at most 83 percent fell into the acceptable range for the 180-degree turns. There were considerably more ratings falling in the "only on occasion" category for the 180-degree turns. Therefore, with the larger angle of intercept, the pilots tended to feel the approach was less acceptable.

PILOT IN-FLIGHT COMMENTS.

Most of the in-flight pilot comments pertained to safety and passenger comfort. The 180's with a 1600-ft final brought comments such as, "have to bank too much" and "tight, not recommended, too sharp a turn." One pilot also felt the 180 with a 1200-foot final caused too steep of a bank angle. Another felt the 180 with an 800-ft final was "less desirable a profile; liked it personally but for passengers wouldn't do it."

Only one pilot stated he wouldn't do the 90-degree turn with the 1600-ft final with passengers.

POST FLIGHT QUESTIONNAIRES.

This questionnaire provided overall comparative measures concerning the acceptablility of each procedure. A tabular synopsis of the post flight ratings is found in tables 7, 8, and 9.

Ratings for each turn angle. Only 1 of the 18 pilots' overall ratings for the 45- and 90-degree turn angles, regardless of final segment, was given as marginal, while 4 marginal ratings and 1 inadequate rating were received for the 180-degree turns. Their ratings for safety margin also reflect a similar pattern; the 45- and 90-degree turns received better ratings than the 180-degree turns. Although there were 4 more ratings of 5 for the control margin aspect with the 45-degree turns than with the 90-degree turns, both sets of ratings indicate acceptable control margins. Again as with the other factors, the control margin factor with the 180- degree turns was not as acceptable. Workload ratings show the same pattern as control margin; the 45- and 90-degree turns are more acceptable than the 180-degree turns. As for desirability, the 45s had more ratings of 1 than the 90s, but both were rated desirable while the 180s had a wider spread of ratings with only 4 ratings of 1.

Overall the 45- and 90-degree turns were rated more desirable than the 180 degree turns.

This pattern was also seen with the ratings received by pilots following the curved approaches using left turns to final.

Table 7. Rankings of the Post flight Turn Angle Ratings

Rating Area	45	90	180
Overall	1	1	2
Control Margin	1	1	2
Workload	1	2	3
Safety Margin	1	1	2
Desirability	1	1	2

1 = Generally acceptable, 2 = Neutral, 3= Not as Acceptable

Table 8. Rankings of the Post flight Final Segment Ratings

Rating Area	800 ft	1200 ft	1600 ft
Control Margin	2	1	1
Workload	2	1	1
Safety Margin	2	1	1
Desirability	2	1	1

1 = Generally acceptable, 2 = Neutral, 3= Not as Acceptable

Table 9. Post flight Ratings for Final Segment by Turn Angle Combinations

180/ 800	90/ 800	45/ 800	180/ 1200	90/ 1200	45/ 1200	180/ 1600	90/ 1600	45/ 1600
5	3	3	4	3	1	5	2	1

1 = Most Acceptable... 3 = Neutral... 5 = Least Acceptable

Ratings for each final segment. All three final segments were rated as adequate for all four factors, safety margin, control margin, workload, and desirability. However there were more marginal ratings and fewer ratings of 1's for the 800-ft final than for the 1200-ft and 1600-ft final segments. This is particularly true with the ratings for desirability where 3 pilots rated the 800-ft final as marginal and only 6 rated it with a 1. This pattern indicates that the longer final segments are more desirable.

This too reflects what was seen with the approaches using left turns to final.

Overall rating for turn angle and final segment combination. Of the combinations, the most desirable or adequate procedures are the 45-degree turns with either the 1600-ft or 1200-ft final segment. The next most desirable procedure was the 90-degree turn

with the 1600-ft final. The least adequate procedures were the 180-degree turns with either the 1600-ft or the 800-ft final segment.

The 180-degree turns with an 800-ft final were also rated the least desirable with the left turn approaches. In contrast, however, with the left turn approaches, the 90-degree turn with a 1600-ft final was rated most desirable and the 45-degree turn with a 1600-ft final was not rated as desirable.

POST FLIGHT PILOT COMMENTS.

Numerous comments were received concerning the effects of adverse wind conditions, such as tailwinds, on both the pilot and passengers. These comments provided additional subjective input for determining the acceptability of each procedure. The following are samples of the comments received:

1. "Wind conditions were 250-310 at 8 kts which allowed a good headwind component for approaches thus good ratings. A tailwind would probably cause me to lower these. Also I would lower all of the ratings for night approaches."

2. "The acceptability of each geometry is dependent upon ambient wind. While these maneuvers may be safe and controllable they are not conducive to passenger comfort and security."

3. " Significant pilot windshield distortion in lower forward corner interferes with rate of closure judgement.... All approaches except the 180° at 1600 ft are comfortable. The turn in for the 180/1600 is too tight for passenger comfort and would be expected to be bad at night. 45° and 90° approaches may be better at night than 180° ."

4. "There is absolutely no justification in practice for forcing a steep 180° (short radius) turn for the 1200 ft final segment. Turn radius should be independent of final segment length and should be based solely on the performance margins, ground speed and perceived comfort of the helicopter being flown."

5. "All approaches mostly into wind. With a 90° or possibly quartering tailwind the 180°/800 ft final would be challenging probably a 3/4 (rating). A pilot using 180° must be prepared to execute the procedure without delay."

6. "Safety and controllability not a question. Workload no problem ..."

7. "As a pilot... I found all of the approaches in all configurations fine (that is AS A PILOT). There were no problems. Now, as a commercial pilot in charge of passengers, I'm sure I'd get complaints if I were going into 60th St NYC and

make a 180° 800 ft out. Even the 90° may not be comfortable to the pax from the 800 ft distance. Those two I'm positive would uncomfortable to the passengers. 1200 ft + 1600 ft would be ok or the 45° turn would be ok even from the 800 ft distance. From the passengers point of view, they'd by VERY unhappy if these approaches were done at night. If it were gusting at night, my work would be compounded but I still feel it would never compromise safety but the passengers wouldn't like it AT ALL."

8. "... A good headwind would make a big difference. Right seat right turns were easier than left turns- visibility and reference points are a lot more comfortable for workload and controllability."

9. "...I seem to be more comfortable doing the 180's at 800 and 1200 ft range."

10. " the 90° app. is most desirable. The 180° app, esp at 1600 ft would be a 'test' at night. Passenger comfort on all 180° app is very marginal. This is based on the tight turn required. .... Concerning the 45° app..I have nothing positive or negative."

11. "On the 45° intercept the initial turn 'felt' hurried..."

12. "All approaches from a pilots point of view are adequate. However our passengers are familiar with jet corporate transportation and find banks in excess of 20°, high rates of descent and rapid deceleration as trauma."

13. " from a pilot view all approaches were simple to complete. The 180° app may be uncomfortable to passengers."

These comments verify that the 180°- turns are not the most desirable, particularly from the passenger point of view.

CONCLUSIONS

1. At most, 500 ft of lateral airspace, or approximately 250 ft on either side of the desired path, was consumed during the curved segment of the 45-degree turns, approximately 800 to 900 ft during the 90-degree turns and as much as 1500 ft during the 180-degree turns. This is discussed in more detail in the results section of this report. Plots of this data can be found in appendix D.

2. The lateral airspace required by the right turns, regardless of turn angle or final segment, was less than that required by the left turns. Nonetheless, both the right turn composite and statistical plots support a conclusion that the 180-degree turns are not as practical as the 45- and 90-degree turns for use at helipads that have certain restrictions, such as obstacle or

noise abatement requirements. In addition, both in-flight and post-flight pilot ratings favor this conclusion. The lateral airspace required for the 180-degree turns is much larger than that for the 45- and 90-degree turns. Therefore, these turns have less practical value. A similar conclusion was also found with the left turn approach data.

However, unlike the left turn approaches where the 45- and 90-degree turns required a similar amount of lateral airspace throughout the entire approach, the 45-degree turns with the right turns required approximately 300 to 400 ft less than the 90-degree turns during the curved segment. Both required less airspace than the 180-degree turns.

Pilot comment also supports the conclusion that the 180s would be unacceptable, particularly from a passenger point of view.

3. Although the pilots did not subjectively indicate any major problems with performing the maneuvers with an 800-ft final segment, the plots indicate that, when asked to perform these maneuvers, they tended to come out of the turn at a distance approximately 1000 ft from the touchdown point. This indicates they would opt for the added safety of a slightly longer final segment.

Therefore, as concluded with the left turn approach tests, the 800-ft final segment would not be an acceptable option.

4. With four standard deviation envelopes, the dispersions in the lateral planes with the 45- and 90-degree turns were as large as +/- 650 ft, while with the six standard deviation envelopes, they were as large as +/- 950 ft. dispersions for the 180-degree turns were as much as 500 ft larger in the lateral plane. In the vertical plane, the dispersions went to the ground for the six standard deviation envelopes and 50 to 100 above the ground with the four standard deviation envelopes. These dispersions in flight paths, in both the lateral and vertical planes, are discussed more in depth in the results section under the area titled "Statistical Plots." The actual plots can be found in appendix E.

5. Since there were no obstacles in the testing area, the airspace requirements would most likely be smaller if visual references were available.

6. All the approaches are flyable with approach angles as large as 10 degrees.

RECOMMENDATIONS

1. Curved approaches with any of the turn angles would be acceptable for areas that can not meet the current protected airspace clearance requirements. However, the 45-degree turns would be the most feasible, followed by the 90-degree turns if the 45s could not be conducted. The 180-degree turns could be performed with normal pilot techniques, but further studies with these turns might be necessary if passenger comfort is to be considered.

2. Based on the subjective data, and the pilots comments, the straight segment following the turn should be no less than 1000 ft if right turns are used, and no less than 1200 ft for left turn approaches.

3. All the approaches are flyable with approach angles as large as 10 degrees.

APPENDIX A
FLIGHT LOG

VMC CURVED APPROACH FLIGHTS			
FLT #:	Date:	Aircraft:	Tracker:
Subject Pilot:	Safety Pilot:	Crew:	
Event 1- Start Run	Event 2- Start Curve	Sync Clock to Tracker	
Event 3- End Curve	Event 4- Touchdown		

Run	Winds	Events				Contr	Work	Safety	Comments
45 1600									
45 1200									
45 800									
90 1600									
90 1200									
90 800									
180 1600									
180 1200									
180 800									
45 1600									
45 1200									
45 800									
90 1600									
90 1200									
90 800									
180 1600									
180 1200									
180 800									

How would you rate this approach in terms of:
a) controllability; b) work load; c) safety

APPENDIX B
POST FLIGHT QUESTIONAIRE

HELICOPTER VISUAL METEOROLOGICAL CONDITIONS (VMC)

CURVED APPROACH TESTS

Aircraft Type: ___________

Operational Pilot Information:

Name: ______________________________

Affiliation: ______________________________

Address: ______________________________

City: ______________________________

Phone (Optional): ______________________________

FAA Helicopter Ratings: ______________________________

Total Flight Hours: ______________________________

Total Helicopter Hours: ______________________________

Total Time in Type: ______________________________

Total Helicopter Hours Last 6 Months: ______________________________

Time In Type Last 6 Months: ______________________________

1. Overall how would you rate the:

	Inadequate		Marginal		Adequate
a. 45 degree turns?	1	2	3	4	5
b. 90 degree turns?	1	2	3	4	5
c. 180 degree turns?	1	2	3	4	5

2. How would you rate the safety margin with the:

	Inadequate		Marginal		Adequate
a. 45 degree turns?	1	2	3	4	5
b. 90 degree turns?	1	2	3	4	5
c. 180 degree turns?	1	2	3	4	5

3. How would you rate the control margin with the:

	Inadequate		Marginal		Adequate
a. 45 degree turns?	1	2	3	4	5
b. 90 degree turns?	1	2	3	4	5
c. 180 degree turns?	1	2	3	4	5

4. How would you rate the workload with the:

	Inadequate		Marginal		Adequate
a. 45 degree turns?	1	2	3	4	5
b. 90 degree turns?	1	2	3	4	5
c. 180 degree turns?	1	2	3	4	5

5. How would you rate the desirability of the :

	Inadequate		Marginal		Adequate
a. 45 degree turns?	1	2	3	4	5
b. 90 degree turns?	1	2	3	4	5
c. 180 degree turns?	1	2	3	4	5

6. How would you rate the safety margin with each final segment?

	Inadequate		Marginal		Adequate
a. 800 foot final	1	2	3	4	5
b. 1200 foot final	1	2	3	4	5
c. 1600 foot final	1	2	3	4	5

7. How would you rate the control margin with each final segment?

	Inadequate		Marginal		Adequate
a. 800 foot final	1	2	3	4	5
b. 1220 foot final	1	2	3	4	5
c. 1600 foot final	1	2	3	4	5

8. How would you rate the workload with each final segment?

	Inadequate		Marginal		Adequate
a. 800 foot final	1	2	3	4	5
b. 1200 foot final	1	2	3	4	5
c. 1600 foot final	1	2	3	4	5

9. How would you rate the desirability of each final segment?

	Inadequate		Marginal		Adequate
a. 800 foot final	1	2	3	4	5
b. 1200 foot final	1	2	3	4	5
c. 1600 foot final	1	2	3	4	5

10. Using the following scale rate each combination for the overall approach.

1 - Inadequate
2
3 - Marginal
4
5 - Adequate

Final Segment

Turn		800	1200	1600
	180			
	90			
	45			

Comments:

APPENDIX C
STATISTICAL LISTINGS

S76
VERT. VELOCITY (ft/min) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (45deg, 1600ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-3.59	-495.10	258.02	1.03	2.24	4
0.00	-502.31	302.69	-0.72	3.06	27
3.59	-562.20	313.18	-0.48	3.16	35
7.18	-610.07	311.31	-0.33	3.36	35
10.77	-646.75	301.27	0.23	3.11	35
14.36	-670.56	69.41	-0.06	2.87	35
17.95	-669.11	247.70	-0.30	2.30	35
21.54	-734.77	266.82	-0.46	3.14	35
25.13	-785.22	271.85	-0.19	3.16	35
28.72	-726.46	237.18	-0.17	2.28	35
32.31	-718.12	257.28	0.05	2.32	35
35.90	-709.53	228.19	0.20	2.59	35
39.49	-687.79	200.37	0.09	2.96	35
43.08	-687.50	193.55	-0.18	2.15	35

S76
FLIGHT ALTITUDE (ft) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (45deg, 1600ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-3.59	414.82	39.45	0.30	1.66	4
0.00	389.54	54.66	-0.24	2.72	27
3.59	387.09	57.38	0.16	3.09	35
7.18	377.88	58.10	0.23	3.13	35
10.77	367.95	59.04	0.26	3.15	35
14.36	357.56	60.06	0.27	3.16	35
17.95	346.72	61.00	0.29	3.20	35
21.54	335.29	61.25	0.36	3.26	35
25.13	322.43	61.36	0.47	3.42	35
28.72	309.46	61.04	0.56	3.67	35
32.31	296.86	60.44	0.64	3.94	35
35.90	284.08	60.28	0.74	4.22	35
39.49	271.31	59.79	0.84	4.54	35
43.08	258.75	58.87	0.92	4.75	35

S76
ALONG PATH SPEED (knot)- crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (45deg, 1600ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degr es counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
   '- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-3.59	73.21	12.60	1.12	2.31	4
0.00	66.69	7.39	1.83	8.43	27
3.59	65.40	6.79	1.96	10.20	35
7.18	64.36	6.80	2.07	10.87	35
10.77	63.12	6.89	2.11	11.23	35
14.36	61.76	7.01	2.16	11.56	35
17.95	60.24	7.12	2.16	11.65	35
21.54	58.68	7.23	2.08	11.39	35
25.13	57.19	7.22	2.00	10.89	35
28.72	55.90	7.08	1.96	10.40	35
32.31	54.97	6.99	1.69	8.82	35
35.90	54.01	6.96	1.49	7.69	35
39.49	52.96	6.90	1.47	7.40	35
43.08	51.96	6.84	1.35	6.77	35

S76
ALTITUDE ERROR (ft) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (45deg, 1600ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
   '- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-3.59	-81.34	37.70	0.09	1.85	4
0.00	-110.14	54.68	-0.24	2.72	27
3.59	-95.36	57.38	0.16	3.09	35
7.18	-87.02	58.11	0.23	3.13	35
10.77	-79.40	59.04	0.26	3.15	35
14.36	-72.23	60.06	0.27	3.16	35
17.95	-65.52	61.00	0.29	3.20	35
21.54	-59.40	61.25	0.36	3.26	35
25.13	-54.71	61.36	0.47	3.42	35
28.72	-50.12	61.04	0.56	3.67	35
32.31	-45.17	60.44	0.64	3.94	35
35.90	-40.40	60.28	0.74	4.22	35
39.49	-35.62	59.79	0.84	4.54	35
43.08	-30.62	58.87	0.92	4.75	35

S76
RADIAL ERROR (ft) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (45deg, 1600ft)
CURVED APPROACH FLIGHT TESTS S'ARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees
counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-3.59	233.70	598.45	1.13	2.32	4
0.00	-2.75	51.63	-2.24	8.70	27
3.59	6.65	56.32	-1.55	7.28	35
7.18	-1.83	54.94	-1.55	7.40	35
10.77	-8.91	53.97	-1.45	7.14	35
14.36	-14.93	52.70	-1.35	6.77	35
17.95	-19.78	50.78	-1.26	6.41	35
21.54	-22.75	48.17	-1.20	6.14	35
25.13	-23.99	44.93	-1.16	5.89	35
28.72	-24.90	41.48	-1.06	5.24	35
32.31	-26.02	38.60	-0.83	3.99	35
35.90	-26.28	36.99	-0.54	2.99	35
39.49	-24.40	36.57	-0.29	2.54	35
43.08	-19.46	37.00	-0.06	2.37	35

S76
FLIGHT ALTITUDE (ft) - str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (45deg, 1600ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on
Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1575.69	248.89	57.68	0.95	4.83	35
1477.21	235.47	55.61	0.99	4.86	35
1378.73	221.70	53.32	1.03	4.90	35
1280.25	207.90	50.70	1.06	4.90	35
1181.77	194.05	47.83	1.03	4.77	35
1083.29	180.08	45.05	1.01	4.73	35
984.81	165.61	41.94	1.04	4.86	35
886.33	151.12	38.79	1.09	5.04	35
787.85	137.47	35.50	1.08	5.09	35
689.37	122.91	32.39	1.08	5.19	35
590.88	108.50	29.69	1.10	5.39	35
492.40	93.93	27.23	1.21	5.93	35
393.92	79.25	24.07	1.37	6.68	35
295.44	64.89	19.60	1.92	8.86	34
196.96	46.76	18.43	1.38	8.17	33
98.48	29.81	15.90	1.47	7.69	27

S76
ALONG TRACK VELOCITY(KNOT) -str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (45deg, 1600ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1575.69	50.37	6.69	1.18	5.90	35
1477.21	49.31	6.69	1.05	5.56	35
1378.73	48.12	6.60	0.93	5.34	35
1280.25	47.01	6.60	0.88	5.17	35
1181.77	46.21	6.52	0.74	4.87	35
1083.29	44.95	6.49	0.68	4.85	35
984.81	43.59	6.45	0.61	4.50	35
886.33	[illegible]	6.41	0.35	3.83	35
787.85	[illegible]	6.22	0.29	3.80	35
689.37	[illegible]	6.17	0.32	3.74	35
590.88	36.63	6.34	0.33	3.01	35
492.40	34.09	6.09	0.42	2.56	35
393.92	30.98	6.05	0.47	2.07	35
295.46	26.86	5.80	0.46	1.97	34
196.96	22.46	5.48	0.47	1.97	33
98.48	17.17	6.13	0.17	2.13	27

S76
CROSS TRACK ERROR (ft) - str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (45deg, 1600ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1575.69	-13.13	37.50	0.07	2.34	35
1477.21	-5.63	37.76	0.18	2.45	35
1378.73	0.07	37.33	0.23	2.73	35
1280.25	4.17	36.03	0.27	3.15	35
1181.77	6.70	34.07	0.35	3.63	35
1083.29	7.88	31.80	0.47	4.13	35
984.81	8.33	29.20	0.63	4.61	35
886.33	8.04	26.73	0.72	4.88	35
787.85	7.50	24.34	0.70	4.75	35
689.37	7.01	22.07	0.53	4.14	35
590.88	6.16	20.28	0.25	3.30	35
492.40	4.67	19.23	-0.02	2.64	35
393.92	2.48	18.36	-0.22	2.46	35
295.44	-1.12	17.36	-0.18	2.48	34
196.96	-6.13	20.01	-1.16	5.29	33
98.48	-11.45	22.72	-1.75	7.41	27

S76
ALTITUDE ERROR (ft) - str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (45deg, 1600ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on
Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1575.69	-26.81	57.63	0.95	4.84	35
1477.21	-22.95	55.36	0.98	4.87	35
1378.73	-19.55	52.86	1.02	4.91	35
1280.25	-16.26	50.06	1.05	4.91	35
1181.77	-13.03	47.05	1.00	4.76	35
1083.29	-9.91	44.22	0.96	4.69	35
984.81	-7	41.10	0.97	4.77	35
886.33	-4.59	37.98	1.00	4.86	35
787.85	-1.04	34.80	0.96	4.80	35
689.37	1.60	31.86	0.92	4.79	35
590.88	4.44	29.29	0.91	4.90	35
492.40	7.22	26.89	0.99	5.31	35
393.92	10.01	23.80	1.10	5.86	35
295.44	13.37	19.27	1.60	7.59	34
196.96	13.30	17.58	1.39	7.21	33
98.48	14.56	15.25	1.30	6.48	27

S76
FLIGHT ALTITUDE (ft) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (45deg, 1200ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees
counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-5.42	312.10	4.64	0.00	1.00	2
-2.71	370.96	91.49	0.70	1.50	3
0.00	397.04	54.09	-0.03	2.49	21
2.71	405.90	54.76	-0.20	2.40	34
5.42	395.61	54.63	-0.16	2.30	36
8.12	385.69	55.39	-0.12	2.24	36
10.83	374.99	56.34	-0.09	2.21	36
13.54	363.73	57.53	-0.09	2.22	36
16.25	351.81	58.12	-0.09	2.24	36
18.96	338.81	58.25	-0.09	2.25	36
21.67	324.22	58.00	-0.09	2.28	36
24.37	309.49	57.95	-0.06	2.31	36
27.08	295.46	57.77	-0.04	2.32	36
29.79	281.62	56.97	0.01	2.37	36
32.50	267.72	55.76	0.07	2.42	36
35.21	253.76	54.94	0.17	2.47	36
37.92	239.44	53.58	0.26	2.51	36
40.62	225.21	51.74	0.35	2.56	36
43.33	210.81	49.46	0.43	2.69	36

S76
VERT. VELOCITY (ft/min) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNUSS, and KURTOSIS

PATH (45deg, 1200ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-5.42	-450.91	71.56	0.00	1.00	2
-2.71	-551.14	158.73	-0.52	1.50	3
0.00	-478.11	271.87	0.02	2.05	21
2.71	-558.74	280.65	0.01	2.51	34
5.42	-655.09	282.56	-0.12	2.57	36
8.12	-685.06	306.37	-0.12	2.28	36
10.83	-728.43	317.66	0.12	2.59	36
13.54	-760.69	301.88	0.25	3.13	36
16.25	-792.11	282.78	0.18	3.85	36
18.96	-872.81	270.16	0.35	4.12	36
21.67	-910.32	268.67	0.18	3.96	36
24.37	-842.84	262.46	0.61	3.45	36
27.08	-816.60	238.78	0.48	3.26	36
29.79	-787.06	216.80	0.46	2.72	36
32.50	-774.60	206.61	0.02	3.49	36
35.21	-759.83	186.26	0.29	2.52	36
37.92	-749.09	212.94	0.57	2.64	36
40.62	-748.55	231.69	0.06	2.36	36
43.33	-717.65	225.44	0.07	2.15	36

S76
ALONG PATH SPEED-(knot)- crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNUSS, and KURTOSIS

PATH (45deg, 1200ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-5.42	66.04	3.27	0.00	1.00	2
-2.71	67.97	4.06	-0.37	1.50	3
0.00	69.34	5.84	0.13	2.35	21
2.71	69.12	5.84	-0.07	2.59	34
5.42	67.72	6.01	-0.04	2.61	36
8.12	66.64	6.11	-0.01	2.73	36
10.83	65.53	6.28	0.08	2.72	36
13.54	64.36	6.51	0.13	2.62	36
16.25	63.04	6.70	0.18	2.54	36
18.96	61.63	6.83	0.17	2.46	36
21.67	60.16	6.85	0.19	2.46	36
24.37	58.87	6.77	0.22	2.46	36
27.08	57.86	6.79	0.19	2.45	36
29.79	56.83	6.92	0.22	2.39	36
32.50	55.53	7.01	0.25	2.30	36
35.21	53.98	7.00	0.25	2.16	36
37.92	52.39	6.95	0.20	2.02	36
40.62	50.81	6.85	0.14	1.93	36
43.33	49.44	6.73	0.12	1.94	36

S76
ALTITUDE ERROR (ft) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (45deg, 1200ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-5.42	-187.90	4.64	0.00	1.00	2
-2.71	-133.99	84.50	0.70	1.50	3
0.00	-102.54	54.07	-0.03	2.49	21
2.71	-76.65	54.76	-0.20	2.40	34
5.42	-69.48	54.63	-0.16	2.30	36
8.12	-61.95	55.39	-0.12	2.24	36
10.83	-55.20	56.35	-0.09	2.21	36
13.54	-49.01	57.53	-0.09	2.22	36
16.25	-43.47	58.12	-0.09	2.24	36
18.96	-39.02	58.25	-0.09	2.25	36
21.67	-36.16	58.00	-0.09	2.28	36
24.37	-33.44	57.95	-0.06	2.31	36
27.08	-30.01	57.77	-0.04	2.32	36
29.79	-26.39	56.97	0.01	2.37	36
32.50	-22.85	55.77	0.07	2.42	36
35.21	-19.35	54.94	0.17	2.47	36
37.92	-16.22	53.58	0.26	2.51	36
40.62	-12.99	51.74	0.35	2.56	36
43.33	-9.94	49.46	0.43	2.69	36

S76
RADIAL ERROR (ft) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (45deg, 1200ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-5.42	-127.50	0.97	0.00	1.00	2
-2.71	233.47	523.44	0.71	1.50	3
0.00	-13.11	51.13	-1.38	4.46	21
2.71	18.92	68.98	-0.63	3.00	34
5.42	21.23	80.05	-0.19	2.72	36
8.12	14.74	81.67	-0.17	2.49	36
10.83	8.97	82.18	-0.11	2.38	36
13.54	3.80	81.12	-0.05	2.36	36
16.25	-0.50	78.57	0.01	2.37	36
18.96	-3.06	75.00	0.06	2.38	36
21.67	-3.89	69.95	0.09	2.35	36
24.37	-4.56	62.77	0.10	2.28	36
27.08	-6.12	54.50	0.09	2.19	36
29.79	-8.01	46.95	0.02	2.14	36
32.50	-9.10	41.27	-0.09	2.11	36
35.21	-8.80	37.96	-0.03	2.14	36
37.92	-7.13	36.56	0.29	2.54	36
40.62	-4.06	35.88	0.68	3.18	36
43.33	0.28	34.94	0.95	3.64	36

S76
FLIGHT ALTITUDE (ft) - str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNUSS, and KURTOSIS

PATH (45deg, 1200ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on
Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1181.77	199.04	47.27	0.51	2.87	36
1083.29	184.11	44.54	0.62	3.21	36
984.81	169.29	41.70	0.73	3.59	36
886.33	154.71	38.78	0.84	3.99	36
787.85	140.69	35.84	0.96	4.38	36
689.37	126.20	32.44	1.07	4.87	36
590.88	110.69	28.67	1.17	5.46	36
492.40	94.99	24.71	1.19	5.64	36
393.92	79.12	20.58	0.91	4.80	36
295.44	64.00	15.28	0.66	3.62	35
196.96	47.65	11.50	0.14	2.58	34
98.48	29.83	11.13	-0.80	3.82	28

S76
ALONG TRACK VELOCITY(KNOT) -str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNUSS, and KURTOSIS

PATH (45deg, 1200ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on
Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1181.77	47.73	6.44	0.11	2.00	36
1083.29	46.38	6.32	0.02	2.21	36
984.81	44.96	6.19	0.08	2.38	36
886.33	43.55	6.21	0.17	2.51	36
787.85	41.73	6.12	0.13	2.99	36
689.37	39.48	5.73	0.36	2.90	36
590.88	37.31	5.52	0.61	2.55	36
492.40	34.68	5.58	0.64	2.42	36
393.92	31.12	5.61	0.56	2.00	36
295.44	27.43	5.16	0.53	2.11	35
196.96	22.85	4.88	0.58	2.51	34
98.48	17.28	5.01	0.29	2.57	28

S76
CROSS TRACK ERROR (ft) - str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (45deg, 1200ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on
Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1181.77	4.76	33.90	1.05	3.82	36
1083.29	9.10	32.31	1.09	3.92	36
984.81	11.18	30.41	1.08	4.00	36
886.33	11.63	28.04	1.07	4.08	36
787.85	10.79	25.49	1.00	3.97	36
689.37	9.44	23.47	0.78	3.49	36
590.88	7.74	21.66	0.46	2.85	36
492.40	5.27	20.03	0.17	2.25	36
393.92	2.90	18.25	0.01	1.90	36
295.44	-0.46	17.19	0.01	1.88	35
196.96	-3.91	16.63	-0.08	2.09	34
98.48	-10.70	22.95	-1.79	7.79	28

S76
ALTITUDE ERROR (ft) - str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (45deg, 1200ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on
Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1181.77	-7.77	47.25	0.51	2.87	36
1083.29	-5.55	44.40	0.62	3.19	36
984.81	-3.24	41.46	0.71	3.56	36
886.33	-0.70	38.47	0.81	3.92	36
787.85	2.46	35.50	0.92	4.27	36
689.37	5.17	32.13	1.01	4.72	36
590.88	6.91	28.43	1.11	5.27	36
492.40	8.52	24.58	1.11	5.41	36
393.92	9.99	20.57	0.81	4.55	36
295.44	12.34	15.29	0.52	3.31	35
196.96	13.52	11.72	-0.01	2.48	34
98.48	13.62	10.96	-0.44	2.72	28

S76
FLIGHT ALTITUDE (ft) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNUSS, and KURTOSIS

PATH (45deg, 800ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-4.35	422.65	4.00	0.00	1.00	2
-2.18	434.76	34.35	1.87	5.70	9
0.00	417.92	56.77	-0.27	2.45	28
2.18	409.67	55.70	-0.26	2.32	35
4.35	402.35	56.16	-0.27	2.36	36
6.53	392.17	56.25	-0.24	2.45	36
8.70	381.40	56.58	-0.20	2.51	36
10.88	370.27	57.07	-0.16	2.59	36
13.06	358.63	57.76	-0.12	2.66	36
15.23	346.49	58.16	-0.10	2.72	36
17.41	333.54	58.36	-0.06	2.76	36
19.59	319.42	58.71	-0.03	2.79	36
21.76	304.76	58.35	0.00	2.85	36
23.94	290.26	57.68	0.04	2.85	36
26.11	275.85	56.64	0.08	2.85	36
28.29	261.01	55.53	0.14	2.89	36
30.47	245.65	54.44	0.21	3.00	36
32.64	230.14	53.04	0.30	3.24	36
34.82	214.57	51.26	0.42	3.62	36
36.99	198.91	49.42	0.57	4.03	36
39.17	183.81	47.19	0.71	4.42	36
41.35	168.57	44.54	0.84	4.84	36
43.52	153.62	41.72	0.95	5.24	36

S76
VERT. VELOCITY (ft/min) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-4.35	71.97	60.94	0.00	1.00	2
-2.18	-323.20	265.07	-0.51	2.42	9
0.00	-602.81	336.93	-0.39	2.72	28
2.18	-630.16	349.22	-0.43	1.87	35
4.35	-663.23	355.46	-0.31	2.01	36
6.53	-710.53	328.23	-0.32	2.07	36
8.70	-735.29	334.48	-0.61	2.57	36
10.88	-758.04	334.09	-0.37	2.43	36
13.06	-765.69	312.93	-0.11	2.53	36
15.23	-787.78	319.01	0.27	2.45	36
17.41	-827.15	304.16	0.15	3.00	36
19.59	-874.32	269.51	-0.18	4.46	36
21.76	-850.39	243.29	0.11	3.44	36
23.94	-827.73	238.51	-0.01	3.30	36
26.11	-821.39	228.96	0.18	2.87.	36
28.29	-840.58	249.25	0.24	2.90	36
30.47	-839.87	236.59	-0.17	2.81	36
32.64	-820.07	259.77	-0.32	3.33	36
34.82	-812.04	240.00	-0.21	2.48	36
36.99	-739.90	262.44	-0.01	2.51	36
39.17	-726.41	238.37	-0.04	2.05	36
41.35	-690.68	224.18	-0.07	1.79	36
43.52	-664.54	213.94	-0.23	2.22	36

S76
ALONG PATH SPEED (knot)- crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (45deg, 800ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-4.35	78.01	0.71	0.00	1.00	2
-2.18	72.85	7.83	-0.32	2.37	9
0.00	69.85	7.73	-0.60	3.37	28
2.18	69.35	7.87	-0.50	3.15	35
4.35	68.82	8.14	-0.41	3.04	36
6.53	67.81	8.18	-0.39	3.08	36
8.70	66.75	8.26	-0.37	3.10	36
10.88	65.63	8.30	-0.33	3.20	36
13.06	64.38	8.36	-0.24	3.36	36
15.23	63.06	8.38	-0.09	3.44	36
17.41	61.60	8.43	0.02	3.50	36
19.59	60.18	8.34	0.06	3.55	36
21.76	58.85	8.23	0.02	3.60	36
23.94	57.80	8.13	-0.19	3.60	36
26.11	56.79	7.99	-0.29	3.41	36
28.29	55.63	7.77	-0.27	3.36	36
30.47	54.23	7.45	-0.28	3.44	36
32.64	52.55	7.22	-0.40	3.76	36
34.82	50.72	7.04	-0.44	3.80	36
36.99	48.89	6.68	-0.25	3.29	36
39.17	47.11	6.50	-0.24	3.34	36
41.35	45.41	6.22	-0.06	3.17	36
43.52	43.58	6.08	0.14	2.66	36

S76
ALTITUDE ERROR (ft) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-4.35	-77.35	4.00	0.00	1.00	2
-2.18	-65.24	34.35	1.87	5.70	9
0.00	-81.76	56.77	-0.27	2.45	28
2.18	-72.92	55.70	-0.26	2.32	35
4.35	-62.83	56.16	-0.27	2.36	36
6.53	-55.60	56.25	-0.24	2.45	36
8.70	-48.96	56.58	-0.20	2.51	36
10.88	-42.69	57.07	-0.16	2.59	36
13.06	-36.91	57.76	-0.12	2.66	36
15.23	-31.64	58.16	-0.10	2.72	36
17.41	-27.18	58.36	-0.06	2.76	36
19.59	-23.90	58.71	-0.03	2.79	36
21.76	-21.15	58.55	0.00	2.85	36
23.94	-18.23	57.68	0.04	2.85	36
26.11	-15.24	56.64	0.08	2.85	36
28.29	-12.67	55.53	0.14	2.89	36
30.47	-10.62	54.44	0.21	3.00	36
32.64	-8.72	53.04	0.30	3.24	36
34.82	-6.88	51.26	0.42	3.62	36
36.99	-5.13	49.42	0.57	4.03	36
39.17	-2.82	47.19	0.71	4.42	36
41.35	-0.65	44.54	0.84	4.84	36
43.52	1.81	41.72	0.95	5.24	36

S76
RADIAL ERROR (ft) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (45deg, 800ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-4.35	-156.83	14.13	0.00	1.00	2
-2.18	-89.16	44.02	-0.85	2.53	9
0.00	-26.35	56.50	-1.05	3.63	28
2.18	-3.92	74.80	-0.23	2.91	35
4.35	-0.62	85.91	0.30	3.47	36
6.53	-3.34	89.15	0.40	3.47	36
8.70	-5.41	92.22	0.46	3.51	36
10.88	-6.81	94.18	0.47	3.47	36
13.06	-7.77	94.50	0.42	3.33	36
15.23	-8.32	93.18	0.34	3.14	36
17.41	-7.95	90.63	0.23	2.94	36
19.59	-6.43	86.61	0.05	2.75	36
21.76	-4.66	81.22	-0.18	2.74	36
23.94	-3.96	74.96	-0.42	2.99	36
26.11	-4.35	68.56	-0.67	3.41	36
28.29	-4.67	62.86	-0.90	3.90	36
30.47	-4.35	57.81	-1.08	4.36	36
32.64	-3.41	52.93	-1.20	4.77	36
34.82	-2.13	47.97	-1.28	5.14	36
36.99	-0.93	42.87	-1.28	5.39	36
39.17	0.24	37.34	-1.18	5.50	36
41.35	1.69	31.90	-0.85	5.22	36
43.52	3.89	27.38	-0.41	4.64	36

S76
FLIGHT ALTITUDE (ft) - str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (45deg, 800ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
787.85	141.67	39.14	0.99	5.41	36
689.37	126.62	35.28	1.03	5.59	36
590.88	111.12	30.92	0.97	5.22	36
492.40	95.37	26.04	0.75	4.12	36
393.92	79.88	20.57	0.41	2.78	36
295.44	64.73	15.30	0.32	2.12	35
196.96	48.21	11.82	0.20	1.99	32
98.48	31.95	10.36	-0.08	2 33	28

S76
ALONG TRACK VELOCITY(KNOT) -str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNUSS, and KURTOSIS

PATH (45deg, 800ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on
Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
787.85	41.32	5.99	0.24	2.26	36
689.37	39.10	6.27	0.15	2.18	36
590.88	36.97	6.17	0.39	2.44	36
492.40	34.42	5.99	0.35	2.32	36
393.92	31.48	5.76	0.37	2.15	36
295.44	27.78	5.34	0.35	2.21	35
196.96	23.50	5.47	0.39	1.95	32
98.48	17.74	5.65	0.38	2.13	28

S76
CROSS TRACK ERROR (ft) - str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNUSS, and KURTOSIS

PATH (45deg, 800ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on
Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
787.85	6.11	24.88	-0.14	4.18	36
689.37	7.76	23.22	0.01	3.54	36
590.88	7.69	22.32	-0.08	2.98	36
492.40	6.00	21.62	-0.23	2.59	36
393.92	3.04	20.29	-0.26	2.43	36
295.44	-0.15	19.02	-0.20	2.31	35
196.96	-3.90	18.20	-0.35	2.26	32
98.48	-9.73	16.45	-0.15	2.43	28

S76
ALTITUDE ERROR (ft) - str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (45deg, 800ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on
Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
787.85	3.80	39.14	0.99	5.41	36
689.37	5.92	35.23	1.03	5.60	36
590.88	7.61	30.85	0.97	5.24	36
492.40	9.08	25.96	0.74	4.15	36
393.92	10.87	20.49	0.38	2.80	36
295.44	13.04	15.22	0.29	2.12	35
196.96	13.90	11.88	0.16	1.96	32
98.48	15.19	10.70	-0.12	2.35	28

S76
FLIGHT ALTITUDE (ft) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (90deg, 1600ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees
counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-35.85	427.94	54.52	0.03	2.02	10
-28.68	424.07	52.02	-0.09	1.99	13
-21.51	415.77	52.91	-0.06	1.88	15
-14.34	406.53	55.04	0.03	1.75	16
-7.17	393.49	54.28	0.37	1.79	19
0.00	389.54	54.40	0.22	1.81	21
7.17	384.34	55.73	0.11	1.93	22
14.34	377.87	57.56	0.09	2.06	22
21.51	374.13	58.92	-0.03	2.12	23
28.68	365.32	57.76	-0.12	2.38	28
35.85	358.19	61.77	-0.09	2.43	32
43.02	346.35	60.91	-0.25	2.44	35
50.19	337.62	55.22	-0.30	2.67	33
57.36	321.08	53.59	-0.38	2.89	33
54.53	304.44	51.92	-0.37	2.96	33
71.70	289.17	50.18	-0.35	2.95	33
78.87	275.27	48.55	-0.34	2.86	33
86.04	261.87	47.00	-0.32	2.80	33

S76
VERT. VELOCITY (ft/min) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (90deg, 1600ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
   '- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-35.85	-179.26	214.47	-0.06	1.70	10
-28.68	-230.69	247.11	-0.29	1.38	13
-21.51	-237.78	289.20	0.42	3.13	15
-14.34	-296.53	278.19	0.22	3.26	16
-7.17	-372.26	334.48	-0.68	3.70	19
0.00	-458.98	338.35	-0.04	2.97	21
7.17	-397.92	287.33	0.16	2.48	22
14.34	-415.32	255.75	0.67	3.44	22
21.51	-402.30	278.54	0.28	2.93	23
28.68	-529.63	306.03	0.34	2.25	28
35.85	-619.79	283.85	0.17	2.03	32
43.02	-744.12	309.80	-0.17	2.54	35
50.19	-851.04	307.59	-0.16	2.13	33
57.36	-906.08	295.22	-0.27	2.07	33
64.53	-887.13	290.83	-0.59	2.83	33
71.70	-803.35	286.55	-0.55	2.38	33
78.87	-759.44	260.73	-0.38	2.23	33
86.04	-730.05	233.00	-0.22	2.09	33

S76
ALONG PATH SPEED (knot)- crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (90deg, 1600ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
   '- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-35.85	75.47	5.91	0.64	2.21	10
-28.68	73.44	6.19	0.32	2.30	13
-21.51	71.72	6.37	0.13	2.38	15
-14.34	69.97	6.79	-0.08	2.21	16
-7.17	67.93	7.36	-0.16	1.99	19
0.00	66.66	7.05	-0.28	1.96	21
7.17	64.92	6.76	-0.33	1.96	22
14.34	62.89	6.45	-0.18	1.77	22
21.51	60.06	6.69	-0.10	1.74	23
28.68	56.81	6.50	0.33	1.57	28
35.85	55.16	6.21	0.25	1.58	32
43.02	53.91	5.89	0.11	1.92	35
50.19	53.30	5.60	0.16	2.47	33
57.36	52.65	5.32	0.47	3.25	33
64.53	52.26	5.31	0.59	3.45	33
71.70	51.95	5.47	0.45	3.13	33
78.87	51.70	5.62	0.39	2.85	33
86.04	51.15	5.70	0.33	2.61	33

S76
ALTITUDE ERROR (ft) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNUSS, and KURTOSIS

PATH (90deg, 1600ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees
counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-35.85	-72.06	54.52	0.03	2.02	10
-28.68	-75.93	52.02	-0.09	1.99	13
-21.51	-84.23	52.91	-0.06	1.88	15
-14.34	-93.47	55.04	0.03	1.75	16
-7.17	-106.51	54.28	0.37	1.79	19
0.00	-110.11	54.35	0.21	1.81	21
7.17	-96.54	53.67	0.20	1.89	22
14.34	-83.89	53.54	0.27	1.93	22
21.51	-68.72	53.14	0.22	1.87	23
28.68	-59.57	51.71	0.13	2.15	28
35.85	-48.70	55.87	0.09	2.35	32
43.02	-42.49	55.07	-0.15	2.45	35
50.19	-39.70	55.22	-0.30	2.67	33
57.36	-38.71	53.59	-0.38	2.89	33
64.53	-37.82	51.92	-0.37	2.96	33
71.70	-35.57	50.18	-0.35	2.95	33
78.87	-31.95	48.55	-0.34	2.86	33
86.04	-27.82	47.00	-0.32	2.80	33

S76
RADIAL ERROR (ft) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNUSS, and KURTOSIS

PATH (90deg, 1600ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees
counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-35.85	179.87	148.50	-1.95	6.00	10
-28.68	115.39	124.21	-2.45	8.36	13
-21.51	62.95	110.76	-2.72	9.91	15
-14.34	24.16	104.32	-2.79	10.49	16
-7.17	20.55	114.70	-1.59	7.94	19
0.00	1.81	102.62	-2.23	9.83	21
7.17	-11.44	96.79	-2.54	10.92	22
14.34	-20.89	95.18	-2.54	10.84	22
21.51	-22.34	95.35	-2.30	10.02	23
28.68	-0.32	104.48	-1.47	7.17	28
35.85	9.38	105.60	-1.22	6.17	32
43.02	7.80	101.25	-1.04	6.01	35
50.19	-9.14	90.66	-1.24	6.37	33
57.36	-24.28	77.30	-1.53	7.15	33
64.53	-36.11	64.79	-1.84	7.97	33
71.70	-43.66	54.93	-1.91	7.99	33
78.87	-45.57	47.57	-1.64	6.78	33
86.04	-40.39	41.59	-1.16	5.00	33

S76
FLIGHT ALTITUDE (ft) - str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (90deg, 1600ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on
Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1575.69	249.48	44.73	-0.26	2.82	36
1477.21	236.13	43.34	-0.30	2.79	36
1378.73	222.74	41.74	-0.33	2.76	36
1280.25	209.54	40.31	-0.35	2.71	36
1181.77	196.21	38.78	-0.33	2.67	36
1083.29	182.67	36.71	-0.31	2.65	36
984.81	169.13	34.36	-0.26	2.59	36
886.33	155.48	31.82	-0.22	2.57	36
787.85	141.34	29.31	-0.17	2.53	36
689.37	126.60	26.94	-0.12	2.60	36
590.88	111.60	24.49	0.02	2.70	36
492.40	96.19	21.95	0.23	2.80	36
393.92	80.81	19.10	0.49	3.08	36
295.44	65.87	15.72	1.02	3.89	35
196.96	49.64	13.23	1.36	4.31	33
98.48	31.40	11.28	0.94	3.68	29

S76
ALONG TRACK VELOCITY(KNOT) -str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (90deg, 1600ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on
Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1575.69	49.24	5.34	0.32	2.22	36
1477.21	48.77	5.23	0.30	2.22	36
1378.73	48.01	5.09	0.29	2.22	36
1280.25	47.12	5.04	0.26	2.35	36
1181.77	46.11	5.03	0.25	2.60	36
1083.29	45.16	5.12	0.18	2.40	36
984.81	44.07	5.18	0.11	2.27	36
886.33	42.84	4.99	0.35	2.56	36
787.85	41.01	4.82	0.24	3.03	36
689.37	38.87	4.65	0.29	2.66	36
590.88	36.80	4.74	0.23	2.66	36
492.40	34.42	4.72	0.26	2.64	36
393.92	31.11	4.92	0.17	2.37	36
295.44	27.63	4.90	0.08	2.30	35
196.96	22.79	4.85	0.16	1.94	33
98.48	17.49	5.24	-0.17	2.10	29

S76
CROSS TRACK ERROR (ft) - str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (90deg, 1600ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on
Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1575.69	-30.01	37.10	-0.76	3.65	36
1477.21	-18.50	32.55	-0.45	2.81	36
1378.73	-9.99	29.15	-0.31	2.50	36
1280.25	-3.49	26.64	-0.23	2.35	36
1181.77	1.46	24.88	-0.17	2.26	36
1083.29	4.91	23.57	-0.11	2.20	36
984.81	6.87	22.49	-0.02	2.24	36
886.33	7.37	21.53	0.06	2.29	36
787.85	7.28	21.02	0.07	2.26	36
689.37	6.75	20.29	0.05	2.16	36
590.88	5.97	19.15	0.00	2.03	36
492.40	4.52	18.86	-0.04	2.07	36
393.92	2.22	18.48	-0.16	2.10	36
295.44	-1.42	17.57	-0.22	2.28	35
196.96	-4.67	17.14	-0.17	2.20	33
98.48	-9.79	15.44	0.11	2.12	29

S76
ALTITUDE ERROR (ft) - str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (90deg, 1600ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on
Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1575.69	-26.08	44.72	-0.26	2.82	36
1477.21	-21.83	43.23	-0.31	2.82	36
1378.73	-17.98	41.49	-0.36	2.82	36
1280.25	-14.19	39.94	-0.39	2.78	36
1181.77	-10.66	38.36	-0.38	2.76	36
1083.29	-7.39	36.25	-0.37	2.75	36
984.81	-4.06	33.95	-0.32	2.70	36
886.33	-0.70	31.57	-0.28	2.68	36
787.85	2.26	29.42	-0.23	2.61	36
689.37	4.71	27.40	-0.20	2.64	36
590.88	6.97	25.22	-0.11	2.65	36
492.40	9.02	22.92	0.02	2.61	36
393.92	11.40	20.36	0.18	2.62	36
295.44	14.70	17.09	0.54	2.89	35
196.96	16.75	15.46	0.66	3.08	33
98.48	17.58	14.84	0.54	3.15	29

S76
FLIGHT ALTITUDE (ft) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNUSS, and KURTOSIS

PATH (90deg, 1200ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-27.10	434.75	43.17	0.17	2.04	24
-21.68	428.74	44.23	0.24	2.07	26
-16.26	422.68	45.18	0.32	2.08	28
-10.84	417.44	46.75	0.37	1.97	28
-5.42	412.54	48.15	0.35	1.89	28
0.00	406.75	49.61	0.35	1.83	28
5.42	402.70	51.63	0.28	1.72	29
10.84	395.34	53.20	0.29	1.73	29
16.26	390.14	54.60	0.22	1.75	31
21.68	385.67	59.85	0.32	2.00	34
27.10	379.81	62.64	0.25	2.02	36
32.52	369.29	64.48	0.25	2.12	36
37.94	357.87	65.95	0.23	2.20	36
43.36	345.47	67.11	0.19	2.26	36
48.78	338.52	62.91	0.26	2.14	34
54.20	323.64	62.42	0.23	2.14	34
59.62	307.44	61.64	0.20	2.17	34
65.04	290.38	60.59	0.18	2.24	34
70.46	273.48	59.20	0.18	2.32	34
75.88	257.35	57.35	0.20	2.41	34
81.30	241.04	54.98	0.22	2.51	34
86.72	224.71	52.38	0.25	2.63	34

S76
VERT. VELOCITY (ft/min) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNUSS, and KURTOSIS

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-27.10	-212.66	310.87	-0.65	4.07	24
-21.68	-241.88	293.05	-0.57	3.89	26
-16.26	-300.84	284.09	-0.29	3.98	28
-10.84	-356.78	280.66	-0.42	4.06	28
-5.42	-405.92	286.97	-0.15	3.31	28
0.00	-463.07	277.46	0.06	3.03	28
5.42	-515.74	285.52	-0.11	2.27	29
10.84	-553.05	331.28	-0.37	2.47	29
16.26	-595.41	317.83	-0.31	1.97	31
21.68	-626.03	307.28	-0.26	2.01	34
27.10	-667.52	307.43	-0.32	2.00	36
32.52	-698.36	283.84	-0.43	2.32	36
37.94	-735.69	254.06	-0.34	2.34	36
43.36	-784.86	238.00	-0.08	3.12	36
48.78	-830.80	248.28	-0.08	2.63	34
54.20	-887.12	260.11	0.04	2.23	34
59.62	-908.32	268.95	-0.30	2.17	34
65.04	-918.30	261.57	-0.61	2.91	34
70.46	-858.46	240.21	-0.96	4.28	34
75.88	-823.07	220.94	-0.87	4.04	34
81.30	-807.71	235.58	-0.34	2.90	34
86.72	-792.67	244.33	-0.39	2.83	34

S76
ALONG PATH SPEED (knot)- crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (90deg, 1200ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-27.10	73.20	7.19	-0.27	2.03	24
-21.68	72.78	6.93	-0.27	2.09	26
-16.26	71.79	7.01	-0.11	1.97	28
-10.84	71.13	7.11	-0.08	1.98	28
-5.42	70.25	7.21	-0.06	1.96	28
0.00	69.21	7.33	-0.05	1.94	28
5.42	68.11	7.43	-0.12	1.96	29
10.84	66.71	7.52	-0.11	2.00	29
16.26	65.29	7.48	-0.10	1.96	31
21.68	63.55	7.27	-0.01	1.84	34
27.10	61.85	6.83	0.04	1.84	36
32.52	60.18	6.52	0.14	1.91	36
37.94	58.53	6.21	0.27	2.06	36
43.36	57.05	6.08	0.29	2.18	36
48.78	56.14	5.84	0.13	2.51	34
54.20	54.91	5.61	-0.07	3.09	34
59.62	53.65	5.49	-0.38	3.74	34
65.04	52.39	5.47	-0.60	4.17	34
70.46	51.10	5.53	-0.49	3.98	34
75.88	49.88	5.62	-0.32	3.80	34
81.30	48.47	5.69	-0.21	3.38	34
86.72	47.07	5.72	-0.08	2.95	34

S76
ALTITUDE ERROR (ft) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-27.10	-65.25	43.17	0.17	2.04	24
-21.68	-71.26	44.23	0.24	2.07	26
-16.26	-76.44	45.32	0.26	2.03	28
-10.84	-82.56	46.75	0.37	1.97	28
-5.42	-87.46	48.15	0.35	1.89	28
0.00	-92.80	49.60	0.35	1.83	28
5.42	-78.63	50.47	0.29	1.76	29
10.84	-67.32	50.86	0.33	1.80	29
16.26	-54.09	51.17	0.29	1.80	31
21.68	-40.36	55.88	0.41	2.07	34
27.10	-28.01	58.05	0.35	2.06	36
32.52	-20.10	59.43	0.35	2.14	36
37.94	-13.08	60.60	0.32	2.19	36
43.36	-7.04	61.57	0.27	2.20	36
48.78	-4.29	62.91	0.26	2.14	34
54.20	-1.71	62.42	0.23	2.14	34
59.62	-0.44	61.64	0.20	2.17	34
65.04	-0.03	60.59	0.18	2.24	34
70.46	0.53	59.20	0.18	2.32	34
75.88	1.86	57.35	0.20	2.41	34
81.30	3.03	54.98	0.22	2.51	34
86.72	4.15	52.38	0.25	2.63	34

S76
RADIAL ERROR (ft) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (90deg, 1200ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-27.10	29.32	165.33	-0.78	3.54	24
-21.68	-10.09	154.90	-0.92	3.83	26
-16.26	-5.97	234.15	1.86	9.95	28
-10.84	-67.24	148.36	-0.89	3.78	28
-5.42	-87.58	148.18	-0.83	3.63	28
0.00	-101.40	148.85	-0.77	3.49	28
5.42	-104.79	149.75	-0.77	3.41	29
10.84	-109.29	150.58	-0.74	3.34	29
16.26	-99.92	151.74	-0.78	3.31	31
21.68	-82.53	154.76	-0.79	3.27	34
27.10	-70.07	156.47	-0.75	3.25	36
32.52	-69.15	153.58	-0.71	3.32	36
37.94	-67.95	149.46	-0.66	3.41	36
43.36	-66.63	143.37	-0.64	3.52	36
48.78	-69.24	137.58	-0.60	3.45	34
54.20	-67.29	125.81	-0.72	3.57	34
59.62	-63.93	111.80	-0.94	3.75	34
65.04	-59.04	96.84	-1.22	4.11	34
70.46	-53.17	81.64	-1.47	4.64	34
75.88	-46.38	66.76	-1.65	5.19	34
81.30	-37.72	53.62	-1.74	5.65	34
86.72	-26.37	43.63	-1.69	5.72	34

S76
FLIGHT ALTITUDE (ft) - str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (90deg, 1200ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1181.77	212.57	49.05	0.24	2.82	36
1083.29	195.96	46.09	0.27	2.97	36
984.81	179.82	42.66	0.28	3.12	36
886.33	164.01	38.98	0.29	3.23	36
787.85	148.50	35.00	0.26	3.27	36
689.37	132.57	31.01	0.16	3.18	36
590.88	116.28	27.44	0.04	2.97	36
492.40	100.59	23.82	-0.02	2.90	36
393.92	84.40	20.24	-0.14	2.77	36
295.44	67.92	16.16	-0.15	2.69	36
196.96	50.97	12.23	-0.20	2.56	35
98.48	33.61	9.03	-0.69	3.04	26

S76
ALONG TRACK VELOCITY(KNOT) -str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (90deg, 1200ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on
Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1181.77	44.92	5.40	0.20	3.05	36
1083.29	44.14	5.36	0.29	3.12	36
984.81	43.32	5.37	0.37	3.13	36
886.33	42.28	5.61	0.40	3.03	36
787.85	41.11	5.42	0.37	3.34	36
689.37	39.47	5.21	0.28	3.43	36
590.88	37.54	5.17	0.18	2.74	36
492.40	34.81	4.96	0.24	2.47	36
393.92	31.80	4.74	0.34	2.85	36
295.44	28.45	4.30	0.38	3.03	36
196.96	23.77	3.93	0.06	3.03	35
98.48	18.25	3.95	-0.04	3.70	26

S76
CROSS TRACK ERROR (ft) - str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (90deg, 1200ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on
Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1181.77	-14.35	36.94	-1.51	5.33	36
1083.29	-2.91	31.47	-0.81	3.68	36
984.81	3.84	28.39	-0.12	2.90	36
886.33	7.33	26.46	0.32	2.98	36
787.85	8.77	24.54	0.48	3.23	36
689.37	9.36	22.67	0.38	3.02	36
590.88	9.33	21.14	0.10	2.36	36
492.40	8.06	19.91	-0.09	1.91	36
393.92	5.42	18.41	-0.15	1.75	36
295.44	1.45	17.26	-0.11	1.79	36
196.96	-3.50	17.10	0.03	1.94	35
98.48	-10.26	18.37	0.27	1.79	26

S76
ALTITUDE ERROR (ft) - str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (90deg, 1200ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1181.77	5.81	49.05	0.24	2.82	36
1083.29	6.46	45.98	0.25	2.95	36
984.81	7.37	42.41	0.26	3.08	36
886.33	8.56	38.59	0.25	3.16	36
787.85	10.06	34.49	0.19	3.18	36
689.37	11.17	30.42	0.06	3.09	36
590.88	11.97	26.96	-0.09	2.91	36
492.40	13.51	23.55	-0.18	2.86	36
393.92	14.78	20.30	-0.31	2.76	36
295.44	16.04	16.57	-0.31	2.63	36
196.96	17.14	12.98	-0.28	2.29	35
98.48	18.36	10.65	-0.66	2.86	26

S76
FLIGHT ALTITUDE (ft) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (90deg, 800ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-21.77	432.02	43.45	0.53	2.41	31
-17.42	428.92	44.55	0.54	2.39	31
-13.06	425.46	45.81	0.52	2.35	31
-8.71	418.89	48.16	0.47	2.28	32
-4.35	415.69	50.66	0.34	2.07	33
0.00	409.72	52.90	0.26	2.06	33
4.35	403.08	55.82	0.18	2.13	33
8.71	396.99	58.62	0.04	2.27	34
13.06	388.59	61.69	-0.02	2.49	34
17.42	379.72	64.73	-0.06	2.67	34
21.77	370.62	67.43	-0.07	2.85	34
26.12	361.23	69.53	-0.07	2.99	34
30.48	351.44	71.05	-0.07	3.13	34
34.83	341.12	72.21	-0.06	3.29	34
39.18	329.91	73.27	-0.07	3.46	34
43.54	317.91	74.03	-0.06	3.60	34
47.89	315.38	62.60	0.72	3.48	32
52.25	301.02	62.41	0.75	3.48	32
56.60	285.44	61.54	0.76	3.41	32
60.95	268.83	59.51	0.72	3.24	32
65.31	251.77	57.09	0.70	3.20	32
69.66	234.06	54.56	0.67	3.25	32
74.01	216.51	51.61	0.62	3.31	32
78.37	198.71	47.12	0.59	3.42	32
82.72	181.17	41.73	0.56	3.41	32
87.08	163.96	36.80	0.44	3.23	32

S76
VERT. VELOCITY (ft/min) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (90deg, 800ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
   '- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-21.77	-216.61	268.45	-0.79	4.39	31
-17.42	-237.81	288.60	-0.68	3.79	31
-13.06	-293.72	271.96	-0.63	3.06	31
-8.71	-358.55	305.14	-0.25	3.27	32
-4.35	-416.62	351.00	0.00	3.33	33
0.00	-460.51	376.26	0.17	3.19	33
4.35	-520.79	402.02	0.25	3.36	33
8.71	-584.59	397.99	0.31	3.49	34
13.06	-628.64	358.09	0.57	4.18	34
17.42	-644.49	318.52	0.58	4.02	34
21.77	-660.86	281.78	0.66	3.84	34
26.12	-663.46	243.83	0.81	3.15	34
30.48	-691.69	237.44	0.97	3.28	34
34.83	-715.77	245.27	0.71	2.60	34
39.18	-752.41	254.15	0.52	2.61	34
43.54	-793.55	269.87	0.55	3.12	34
47.89	-875.15	296.17	0.61	3.39	32
52.25	-884.34	290.12	0.12	2.72	32
56.60	-937.04	258.74	0.07	1.73	32
60.95	-894.56	252.31	-0.50	2.29	32
65.31	-911.77	229.72	-0.79	2.65	32
69.66	-886.22	232.42	-0.78	2.71	32
74.01	-858.94	234.76	-0.73	2.55	32
78.37	-821.61	281.35	-0.64	2.73	32
82.72	-766.27	306.76	-0.72	3.15	32
87.08	-725.06	266.87	-0.87	2.93	32

S76
ALONG PATH SPEED (knot)- crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-21.77	73.46	7.69	-0.29	2.19	31
-17.42	73.07	7.67	-0.33	2.15	31
-13.06	72.53	7.64	-0.33	2.07	31
-8.71	71.39	8.03	-0.34	2.00	32
-4.35	70.91	8.06	-0.41	2.06	33
0.00	70.19	8.16	-0.42	2.07	33
4.35	69.41	8.27	-0.42	2.08	33
8.71	68.35	8.22	-0.32	1.96	34
13.06	67.36	8.22	-0.28	1.95	34
17.42	66.27	8.08	-0.23	1.96	34
21.77	65.08	7.90	-0.14	1.97	34
26.12	63.74	7.76	-0.07	2.05	34
30.48	62.37	7.62	-0.01	2.11	34
34.83	61.00	7.43	0.04	2.17	34
39.18	59.70	7.13	0.00	2.21	34
43.54	58.37	6.88	-0.07	2.31	34
47.89	57.77	6.04	0.09	2.41	32
52.25	56.16	5.73	0.19	2.65	32
56.60	54.44	5.60	0.24	2.65	32
60.95	52.62	5.52	0.26	2.35	32
65.31	51.07	5.32	0.18	2.08	32
69.66	49.52	5.23	-0.01	1.82	32
74.01	47.93	5.19	-0.06	1.73	32
78.37	46.12	5.25	-0.11	1.95	32
82.72	44.08	5.14	-0.08	2.05	32
87.08	41.90	4.94	0.15	2.07	32

S76
ALTITUDE ERROR (ft) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (90deg, 800ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-21.77	-67.98	43.45	0.53	2.41	31
-17.42	-71.08	44.55	0.54	2.39	31
-13.06	-74.54	45.81	0.52	2.35	31
-8.71	-81.11	48.16	0.47	2.28	32
-4.35	-84.31	50.66	0.34	2.07	33
0.00	-89.85	52.86	0.27	2.06	33
4.35	-78.45	54.08	0.30	2.03	33
8.71	-66.13	55.08	0.29	2.02	34
13.06	-56.09	56.30	0.36	2.11	34
17.42	-46.52	57.63	0.43	2.24	34
21.77	-37.18	58.75	0.51	2.41	34
26.12	-28.14	59.51	0.57	2.60	34
30.48	-19.49	59.92	0.62	2.84	34
34.83	-11.37	60.17	0.66	3.13	34
39.18	-4.13	60.39	0.69	3.38	34
43.54	2.31	60.62	0.71	3.56	34
47.89	6.95	62.60	0.72	3.48	32
52.25	10.00	62.41	0.75	3.48	32
56.60	11.84	61.54	0.76	3.41	32
60.95	12.64	59.51	0.72	3.24	32
65.31	13.00	57.09	0.70	3.20	32
69.66	12.71	54.56	0.67	3.25	32
74.01	12.56	51.61	0.62	3.31	32
78.37	12.19	47.12	0.59	3.42	32
82.72	12.06	41.72	0.56	3.41	32
87.08	12.26	36.80	0.44	3.23	32

S76
RADIAL ERROR (ft) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-21.77	-20.93	129.97	-0.35	2.16	31
-17.42	-58.70	126.27	-0.31	2.12	31
-13.06	-88.26	124.95	-0.25	2.03	31
-8.71	-96.74	146.27	0.53	3.59	32
-4.35	-118.11	148.43	0.63	3.50	33
0.00	-129.88	149.75	0.64	3.28	33
4.35	-137.61	150.31	0.62	2.95	33
8.71	-136.76	150.52	0.48	2.39	34
13.06	-138.84	148.84	0.44	2.12	34
17.42	-138.40	147.48	0.45	2.06	34
21.77	-135.73	146.65	0.52	2.16	34
26.12	-131.26	145.98	0.61	2.32	34
30.48	-125.44	144.86	0.67	2.46	34
34.83	-118.71	142.64	0.70	2.49	34
39.18	-111.26	138.90	0.67	2.42	34
43.54	-102.83	133.43	0.60	2.28	34
47.89	-99.62	127.50	0.63	2.25	32
52.25	-88.54	118.76	0.50	2.06	32
56.60	-76.58	108.32	0.34	1.88	32
60.95	-64.43	95.98	0.15	1.78	32
65.31	-52.74	81.86	-0.05	1.81	32
69.66	-42.31	67.75	-0.27	1.99	32
74.01	-33.61	55.57	-0.47	2.26	32
78.37	-25.92	45.51	-0.50	2.61	32
82.72	-18.28	37.25	-0.37	3.10	32
87.08	-10.13	31.06	-0.22	3.51	32

S76
FLIGHT ALTITUDE (ft) - str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (90deg, 800ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1575.69	314.92	31.12	0.00	1.00	2
1477.21	284.63	20.18	0.00	1.00	2
1378.73	254.50	13.74	0.00	1.00	2
1280.25	228.09	10.66	0.00	1.00	2
1181.77	209.09	8.09	0.00	1.00	2
1083.29	193.96	8.68	0.00	1.00	2
984.81	179.73	9.22	0.00	1.00	2
886.33	167.76	6.74	0.00	1.00	2
787.85	150.15	31.59	0.33	3.35	36
689.37	133.95	27.58	0.10	2.97	36
590.88	117.75	24.22	-0.04	2.65	36
492.40	100.90	20.90	-0.16	2.56	36
393.92	84.37	17.19	-0.06	2.71	36
295.44	67.49	13.77	0.17	2.95	36
196.96	50.73	10.97	0.42	3.14	35
98.48	35.58	10.30	0.55	2.87	28

S76
ALONG TRACK VELOCITY(KNOT) -str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (90deg, 800ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1575.69	24.49	8.00	0.00	1.00	2
1477.21	29.46	5.52	0.00	1.00	2
1378.73	31.70	3.45	0.00	1.00	2
1280.25	35.13	3.51	0.00	1.00	2
1181.77	37.05	2.92	0.00	1.00	2
1083.29	37.18	1.00	0.00	1.00	2
984.81	37.23	0.45	0.00	1.00	2
886.33	35.63	0.28	0.00	1.00	2
787.85	39.44	4.63	0.28	2.24	36
689.37	37.90	4.61	0.20	2.36	36
590.88	36.00	4.64	0.27	2.34	36
492.40	33.93	4.49	0.22	2.14	36
393.92	31.17	4.58	0.12	2.07	36
295.44	27.81	4.72	0.27	2.57	36
196.96	23.14	5.42	0.40	2.48	35
98.48	17.97	5.39	0.95	3.55	28

S76
CROSS TRACK ERROR (ft) - str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (90deg, 800ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on
Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1575.69	-146.25	42.00	0.00	1.00	2
1477.21	-171.62	81.08	0.00	1.00	2
1378.73	-154.50	90.48	0.00	1.00	2
1280.25	-123.48	87.74	0.00	1.00	2
1181.77	-95.87	74.48	0.00	1.00	2
1083.29	-72.23	59.54	0.00	1.00	2
984.81	-52.91	43.46	0.00	1.00	2
886.33	-35.17	27.65	0.00	1.00	2
787.85	-3.24	26.82	-0.13	3.74	36
689.37	3.20	24.32	-0.04	4.03	36
590.88	6.00	22.58	0.09	4.11	36
492.40	6.11	20.87	0.19	3.63	36
393.92	4.38	19.21	0.06	3.07	36
295.44	1.37	17.72	-0.23	2.77	36
196.96	-2.32	16.55	-0.49	2.75	35
98.48	-8.04	15.68	-0.45	2.33	28

S76
ALTITUDE ERROR (ft) - str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (90deg, 800ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on
Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1575.69	-38.28	13.38	0.00	1.00	2
1477.21	-19.16	4.28	0.00	1.00	2
1378.73	-13.12	0.94	0.00	1.00	2
1280.25	-10.76	1.63	0.00	1.00	2
1181.77	-5.86	2.92	0.00	1.00	2
1083.29	0.17	5.93	0.00	1.00	2
984.81	5.46	7.99	0.00	1.00	2
886.33	12.05	6.40	0.00	1.00	2
787.85	12.29	31.58	0.33	3.35	36
689.37	13.27	27.52	0.09	2.96	36
590.88	14.18	24.12	-0.05	2.66	36
492.40	14.49	20.79	-0.18	2.57	36
393.92	15.21	17.15	-0.07	2.73	36
295.44	15.71	13.87	0.16	2.90	36
196.96	16.47	11.24	0.44	2.93	35
98.48	19.13	10.88	0.48	2.66	28

S76
FLIGHT ALTITUDE (ft) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNUSS, and KURTOSIS

PATH (180deg, 1600ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-71.70	470.66	7.01	0.00	1.00	2
-57.36	461.91	3.82	0.00	1.00	2
-43.02	437.35	3.70	0.00	1.00	2
-28.68	398.63	10.06	0.00	1.00	2
-14.34	417.42	46.18	0.08	1.92	6
0.00	426.02	63.57	-0.10	2.17	36
14.34	419.70	65.55	-0.09	2.28	35
28.68	416.84	66.80	-0.14	2.36	36
43.02	412.31	68.94	-0.12	2.41	36
57.36	414.31	64.96	0.16	2.26	34
71.70	402.74	68.69	0.26	2.23	34
86.04	379.29	71.23	0.35	2.42	34
100.38	344.44	69.59	0.42	2.65	34
114.71	309.31	66.12	0.28	2.50	34
129.05	282.78	63.11	0.24	2.66	34
143.39	263.94	60.77	0.35	2.67	34
157.73	250.01	58.70	0.46	2.67	34
172.07	238.82	56.39	0.55	2.74	34

S76
VERT. VELOCITY (ft/min) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNUSS, and KURTOSIS

PATH (180deg, 1600ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-71.70	-162.21	19.22	0.00	1.00	2
-57.36	-494.57	141.66	0.00	1.00	2
-43.02	-984.60	75.95	0.00	1.00	2
-28.68	-1241.05	9.54	0.00	1.00	2
-14.34	-383.64	569.77	-0.57	1.49	6
0.00	-261.91	292.80	-1.39	5.66	36
14.34	-267.45	234.14	-0.82	3.13	35
28.68	-251.86	269.51	-0.77	2.79	36
43.02	-248.39	312.51	-0.09	2.25	36
57.36	-312.82	320.39	-0.23	2.39	34
71.70	-550.27	393.00	-0.43	2.89	34
86.04	-935.27	427.95	-0.11	2.40	34
100.38	-1125.36	404.93	-0.27	2.63	34
114.71	-1050.58	376.93	-0.49	2.64	34
129.05	-865.34	378.91	-0.30	2.48	34
143.39	-727.51	366.59	-0.68	2.72	34
157.73	-639.27	317.85	-0.50	2.90	34
172.07	-566.67	315.49	0.16	2.55	34

S76
ALONG PATH SPEED (knot)- crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (180deg, 1600ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-71.70	60.03	1.48	0.00	1.00	2
-57.36	50.71	0.25	0.00	1.00	2
-43.02	47.35	0.01	0.00	1.00	2
-28.68	49.13	2.13	0.00	1.00	2
-14.34	69.37	15.43	-0.16	1.36	6
0.00	70.06	10.11	-0.19	2.35	36
14.34	68.29	10.29	-0.05	2.33	35
28.68	65.42	10.29	0.14	2.57	36
43.02	61.30	10.48	0.32	2.93	36
57.36	55.98	10.44	0.48	3.21	34
71.70	48.98	9.39	0.47	2.98	34
86.04	45.00	6.02	0.19	1.98	34
100.38	45.55	5.84	0.11	2.16	34
114.71	47.82	6.31	-0.15	2.48	34
129.05	49.52	6.07	-0.04	2.28	34
143.39	50.59	6.73	-0.32	2.42	34
157.73	51.02	6.39	-0.39	2.48	34
172.07	51.11	6.42	-0.60	2.71	34

S76
ALTITUDE ERROR (ft) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (180deg, 1600ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-71.70	-29.34	7.01	0.00	1.00	2
-57.36	-38.09	3.82	0.00	1.00	2
-43.02	-62.65	3.70	0.00	1.00	2
-28.68	-101.37	10.06	0.00	1.00	2
-14.34	-43.73	69.85	-0.47	1.55	6
0.00	-73.19	63.94	-0.08	2.16	36
14.34	-59.77	61.54	0.03	2.36	35
28.68	-42.27	60.07	-0.01	2.54	36
43.02	-26.35	61.00	0.00	2.47	36
57.36	-15.59	64.96	0.16	2.26	34
71.70	-9.63	68.69	0.26	2.23	34
86.04	-15.55	71.23	0.35	2.42	34
100.38	-32.88	69.59	0.42	2.65	34
114.71	-50.48	66.12	0.28	2.50	34
129.05	-59.49	63.11	0.24	2.66	34
143.39	-60.80	60.77	0.35	2.67	34
157.73	-57.21	58.70	0.46	2.67	34
172.07	-50.87	56.39	0.55	2.74	34

S76
RADIAL ERROR (ft) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (180deg, 1600ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
   '- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-71.70	147.36	68.47	0.00	1.00	2
-57.36	198.33	79.30	0.00	1.00	2
-43.02	202.66	69.79	0.00	1.00	2
-28.68	156.28	43.69	0.00	1.00	2
-14.34	1272.47	1176.29	0.39	1.43	6
0.00	8.21	80.90	2.32	10.86	36
14.34	-4.38	53.25	0.58	3.42	35
28.68	10.92	55.66	0.60	3.10	36
43.02	46.37	62.68	0.38	2.50	36
57.36	103.96	74.46	0.11	2.29	34
71.70	159.21	100.41	0.30	2.38	34
86.04	186.92	132.43	0.65	2.74	34
100.38	171.24	144.00	0.72	2.91	34
114.71	124.03	126.51	0.41	2.46	34
129.05	70.44	104.44	0.44	3.10	34
143.39	23.02	80.41	0.29	2.72	34
157.73	-7.22	72.95	1.27	6.10	34
172.07	-18.28	76.20	2.33	10.40	34

S76
FLIGHT ALTITUDE (ft) - str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (180deg, 1600ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
   '- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1575.69	233.19	53.58	0.49	2.69	36
1477.21	222.51	50.21	0.53	2.72	36
1378.73	211.55	47.17	0.54	2.75	36
1280.25	200.47	44.38	0.55	2.76	36
1181.77	188.81	41.67	0.56	2.77	36
1083.29	176.43	38.69	0.55	2.76	36
984.81	163.86	35.70	0.50	2.71	36
886.33	151.41	33.02	0.52	2.68	36
787.85	138.72	29.81	0.51	2.61	36
689.37	125.86	26.88	0.50	2.54	36
590.88	112.67	23.77	0.44	2.45	36
492.40	99.02	20.96	0.44	2.41	36
393.92	84.37	18.12	0.44	2.51	36
295.44	68.55	15.22	0.28	2.47	36
196.96	51.83	12.56	-0.01	2.03	35
98.48	33.95	10.92	-0.23	2.37	35

S76
ALONG TRACK VELOCITY(KNOT) -str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (180deg, 1600ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on
Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1575.69	50.02	6.10	-0.80	3.08	36
1477.21	49.52	5.93	-0.66	2.69	36
1378.73	48.75	5.54	-0.53	2.58	36
1280.25	47.89	5.39	-0.32	2.54	36
1181.77	46.69	5.34	-0.11	2.57	36
1083.29	45.41	5.38	0.07	2.66	36
984.81	44.13	5.27	0.39	2.73	36
886.33	42.75	5.25	0.46	2.68	36
787.85	41.10	5.23	0.59	2.86	36
689.37	38.56	5.33	0.64	2.89	36
590.88	36.36	4.95	0.74	3.06	36
492.40	33.41	4.84	0.69	3.11	36
393.92	30.21	4.50	0.85	3.47	36
295.44	26.22	4.38	1.14	4.68	36
196.96	21.83	4.48	0.86	3.95	35
98.48	15.32	4.85	0.37	2.91	35

S76
CROSS TRACK ERROR (ft) - str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (180deg, 1600ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on
Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1575.69	-14.41	76.08	2.82	12.78	36
1477.21	-7.20	74.85	3.04	13.76	36
1378.73	-2.18	71.79	3.09	14.02	36
1280.25	1.35	66.32	3.06	13.91	36
1181.77	3.60	58.82	2.92	13.32	36
1083.29	4.69	50.09	2.60	11.96	36
984.81	4.97	41.25	2.10	9.71	36
886.33	4.79	33.36	1.31	6.36	36
787.85	4.41	26.90	0.37	3.02	36
689.37	3.81	22.58	-0.21	1.69	36
590.88	2.96	20.81	-0.11	1.84	36
492.40	1.22	20.73	-0.01	1.80	36
393.92	-1.11	21.44	-0.18	2.18	36
295.44	-3.38	21.17	-0.10	2.15	36
196.96	-6.29	20.49	0.13	1.78	35
98.48	-8.57	18.74	0.08	1.81	35

S76
ALTITUDE ERROR (ft) - str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (180deg, 1600ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on
Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1575.69	-42.27	53.57	0.50	2.70	36
1477.21	-35.03	50.01	0.54	2.77	36
1378.73	-28.60	46.57	0.57	2.84	36
1280.25	-22.64	43.34	0.59	2.90	36
1181.77	-17.48	40.41	0.60	2.93	36
1083.29	-13.09	37.45	0.55	2.91	36
984.81	-8.85	34.67	0.44	2.81	36
886.33	-4.39	32.34	0.40	2.74	36
787.85	-0.09	29.63	0.30	2.60	36
689.37	4.22	27.66	0.20	2.43	36
590.88	8.44	25.77	0.06	2.26	36
492.40	12.79	24.52	-0.04	2.10	36
393.92	16.68	23.95	-0.05	2.03	36
295.44	19.51	22.71	-0.21	1.98	36
196.96	22.05	21.96	-0.34	1.77	35
98.48	23.20	20.92	-0.35	1.96	35

S76
FLIGHT ALTITUDE (ft) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (180deg, 1200ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees
counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-54.20	341.64	15.49	0.00	1.00	2
-43.36	315.33	14.99	0.00	1.00	2
-32.52	290.13	10.52	0.00	1.00	2
-21.68	267.67	3.90	0.00	1.00	2
-10.84	247.38	2.29	0.00	1.00	2
0.00	421.18	68.09	-0.90	4.72	34
10.84	416.34	69.10	-1.00	5.10	34
21.68	410.90	69.73	-1.09	5.37	34
32.52	404.60	70.30	-1.17	5.48	34
43.36	398.34	71.32	-1.22	5.45	35
54.20	400.23	51.60	0.26	2.20	33
65.04	384.74	54.83	0.20	2.16	33
75.88	365.02	57.44	0.21	2.18	33
86.72	341.61	58.27	0.31	2.34	33
97.57	317.29	57.89	0.40	2.54	33
108.41	295.36	56.17	0.44	2.65	33
119.25	276.41	53.99	0.47	2.70	33
130.09	260.30	52.46	0.52	2.68	33
140.93	246.24	51.12	0.55	2.60	33
151.77	234.27	49.70	0.50	2.50	33
162.61	223.28	47.54	0.42	2.43	33
173.45	212.41	45.22	0.35	2.39	33

S76
VERT. VELOCITY (ft/min) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (180deg, 1200ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-54.20	-1231.07	81.05	0.00	1.00	2
-43.36	-1227.82	73.32	0.00	1.00	2
-32.52	-1125.99	198.80	0.00	1.00	2
-21.68	-1062.28	172.20	0.00	1.00	2
-10.84	-918.99	162.33	0.00	1.00	2
0.00	-259.84	265.82	-0.39	2.74	34
10.84	-284.53	261.28	-0.36	3.06	34
21.68	-307.56	315.83	-0.56	3.64	34
32.52	-355.39	356.74	-0.74	4.03	34
43.36	-446.98	400.33	-0.99	4.05	35
54.20	-583.51	425.86	-0.91	3.21	33
65.04	-750.32	415.22	0.09	3.40	33
75.88	-876.20	355.98	1.13	5.36	33
86.72	-965.55	314.54	0.32	4.07	33
97.57	-963.21	285.21	-1.36	4.91	33
108.41	-884.45	312.18	-1.30	5.34	33
119.25	-795.65	308.46	-1.24	5.56	33
130.09	-738.14	315.11	-1.37	6.63	33
140.93	-621.52	278.47	-0.66	3.44	33
151.77	-589.77	243.24	-0.90	3.11	33
162.61	-574.53	250.52	-0.65	3.48	33
173.45	-555.14	225.01	-0.72	3.93	33

S76
ALONG PATH SPEED (knot)- crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-54.20	61.27	0.52	0.00	1.00	2
-43.36	60.47	1.38	0.00	1.00	2
-32.52	59.93	1.94	0.00	1.00	2
-21.68	59.13	2.21	0.00	1.00	2
-10.84	57.33	2.36	0.00	1.00	2
0.00	72.47	10.08	0.04	2.10	34
10.84	70.17	10.50	0.10	1.99	34
21.68	67.20	10.93	0.21	1.91	34
32.52	63.74	11.15	0.24	2.03	34
43.36	60.08	10.41	0.32	2.46	35
54.20	57.39	8.91	0.28	2.88	33
65.04	54.45	6.78	0.34	2.61	33
75.88	52.56	5.67	0.35	2.32	33
86.72	52.18	5.51	0.16	2.90	33
97.57	52.99	5.32	-0.03	2.86	33
108.41	53.34	5.42	-0.24	2.74	33
119.25	52.85	5.61	-0.22	2.60	33
130.09	51.66	5.93	-0.09	2.31	33
140.93	50.40	6.03	-0.13	2.25	33
151.77	49.58	5.82	-0.07	2.58	33
162.61	48.46	5.91	-0.20	3.56	33
173.45	47.49	5.53	0.14	3.32	33

S76
ALTITUDE ERROR (ft) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (180deg, 1200ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-54.20	-158.36	15.49	0.00	1.00	2
-43.36	-184.67	15.00	0.00	1.00	2
-32.52	-209.87	10.52	0.00	1.00	2
-21.68	-232.33	3.90	0.00	1.00	2
-10.84	-252.63	2.29	0.00	1.00	2
0.00	-78.48	68.00	-0.89	4.71	34
10.84	-63.11	60.78	-0.37	3.70	34
21.68	-48.01	54.17	0.18	2.94	34
32.52	-33.76	49.30	0.52	2.60	34
43.36	-19.82	47.98	0.40	2.42	35
54.20	-12.44	51.60	0.26	2.20	33
65.04	-10.46	54.83	0.20	2.16	33
75.88	-12.72	57.44	0.21	2.18	33
86.72	-18.66	58.27	0.31	2.34	33
97.57	-25.52	57.89	0.40	2.54	33
108.41	-29.99	56.17	0.44	2.65	33
119.25	-31.47	53.99	0.47	2.70	33
130.09	-30.12	52.46	0.52	2.68	33
140.93	-26.71	51.12	0.55	2.60	33
151.77	-21.21	49.70	0.50	2.50	33
162.61	-14.74	47.54	0.42	2.43	33
173.45	-8.14	45.22	0.35	2.39	33

S76
RADIAL ERROR (ft) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-54.20	168.23	11.50	0.00	1.00	2
-43.36	142.82	33.34	0.00	1.00	2
-32.52	112.62	48.17	0.00	1.00	2
-21.68	82.78	54.58	0.00	1.00	2
-10.84	57.61	54.38	0.00	1.00	2
0.00	107.92	63.58	0.76	4.87	34
10.84	101.34	57.09	0.40	3.58	34
21.68	104.79	55.59	-0.04	2.36	34
32.52	115.34	69.31	0.06	2.79	34
43.36	132.12	101.07	0.26	3.56	35
54.20	161.25	147.64	0.66	5.14	33
65.04	176.57	197.25	0.99	5.88	33
75.88	177.57	229.02	1.04	5.66	33
86.72	159.90	234.60	0.89	4.84	33
97.57	123.93	210.89	0.44	3.23	33
108.41	80.79	176.75	0.01	2.35	33
[illegible]9.25	42.70	146.97	-0.25	2.22	33
[illegible]0.09	12.08	119.35	-0.50	2.31	33
140.93	-11.51	94.06	-0.75	2.67	33
151.77	-28.76	70.97	-1.00	3.27	33
162.61	-36.79	53.09	-1.17	4.18	33
173.45	-34.75	41.42	-1.24	5.73	33

S76
FLIGHT ALTITUDE (ft) - str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (180deg, 1200ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on
Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1181.77	201.97	42.43	0.35	2.43	35
1083.29	188.92	39.56	0.25	2.46	35
984.81	174.90	36.31	0.19	2.59	35
886.33	160.92	33.12	0.20	2.82	35
787.85	147.29	29.88	0.28	3.19	35
689.37	133.06	26.92	0.43	3.56	35
590.88	118.32	23.82	0.57	3.97	35
492.40	102.54	20.81	0.53	3.78	35
393.92	86.14	17.05	0.41	3.26	35
295.44	69.26	13.38	0.26	2.63	35
196.96	51.34	10.44	0.09	1.99	35
98.48	32.75	8.05	0.21	1.64	34

S76
ALONG TRACK VELOCITY(KNOT) -str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (180deg, 1200ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on
Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1181.77	45.56	5.06	0.41	4.08	35
1083.29	44.80	4.94	0.57	4.33	35
984.81	43.72	4.91	0.64	4.37	35
886.33	42.22	5.22	0.55	4.77	35
787.85	40.77	4.98	0.96	4.45	35
689.37	38.60	4.96	0.82	3.45	35
590.88	36.15	5.00	0.83	3.02	35
492.40	33.33	5.04	0.81	3.90	35
393.92	30.06	5.06	0.74	3.81	35
295.44	26.37	4.78	0.87	3.89	35
196.96	21.82	4.05	0.72	3.73	35
98.48	15.88	3.76	0.62	3.39	34

S76
CROSS TRACK ERROR (ft) - str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (180deg, 1200ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1181.77	-24.15	35.09	-1.36	7.33	35
1083.29	-12.30	32.05	-1.15	6.76	35
984.81	-4.67	32.34	-0.77	5.05	35
886.33	0.26	32.38	-0.49	3.98	35
787.85	2.77	31.05	-0.32	3.36	35
689.37	3.51	28.77	-0.20	3.00	35
590.88	3.27	26.04	-0.09	2.51	35
492.40	2.39	24.12	0.01	2.04	35
393.92	0.77	22.53	-0.06	1.86	35
295.44	-1.73	21.00	-0.10	1.69	35
196.96	-4.77	20.37	-0.09	1.70	35
98.48	-9.25	18.55	-0.06	1.78	34

S76
ALTITUDE ERROR (ft) - str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (180deg, 1200ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
1181.77	-4.66	42.47	0.34	2.43	35
1083.29	-0.06	39.52	0.22	2.41	35
984.81	3.06	36.03	0.12	2.49	35
886.33	6.00	32.74	0.07	2.64	35
787.85	9.29	29.61	0.10	2.90	35
689.37	12.09	27.08	0.21	3.12	35
590.88	14.51	24.54	0.30	3.37	35
492.40	16.07	22.28	0.19	3.05	35
393.92	17.25	19.12	-0.02	2.53	35
295.44	18.35	15.97	-0.21	2.23	35
196.96	18.77	14.07	-0.25	1.97	35
98.48	19.26	12.80	-0.10	1.92	34

S76
FLIGHT ALTITUDE (ft) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (180deg, 800ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-43.54	315.61	29.74	0.00	1.00	2
-34.83	297.45	30.90	0.00	1.00	2
-26.12	281.77	29.55	0.00	1.00	2
-17.42	266.50	27.88	0.00	1.00	2
-8.71	248.55	28.89	0.00	1.00	2
0.00	425.21	70.63	-0.81	5.26	35
8.71	422.62	73.76	-0.94	5.55	36
17.42	417.29	76.77	-1.01	5.72	36
26.12	411.21	79.51	-1.04	5.79	36
34.83	404.21	82.10	-1.03	5.70	36
43.54	395.30	84.61	-0.97	5.56	36
52.25	396.74	62.92	0.83	3.04	34
60.95	379.72	65.62	0.88	3.08	34
69.66	360.81	67.68	0.87	3.07	34
78.[illegible]	341.62	68.20	0.84	3.02	34
87.08	322.46	67.81	0.84	3.02	34
95.78	303.63	66.34	0.86	3.05	34
104.49	285.85	64.17	0.95	3.25	34
113.20	269.09	62.08	1.04	3.54	34
121.91	252:40	59.84	1.10	3.77	34
130.61	235.86	57.81	1.18	4.04	34
139.32	219.78	56.23	1.23	4.22	34
148.03	204.62	55.01	1.28	4.41	34
156.74	190.17	53.84	1.32	4.60	34
165.44	176.24	52.32	1.35	4.81	34
174.15	162.04	49.29	1.35	4.79	34

S76
VERT. VELOCITY (ft/min) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-43.54	-935.56	25.18	0.00	1.00	2
-34.83	-757.94	57.94	0.00	1.00	2
-26.12	-726.48	155.56	0.00	1.00	2
-17.42	-718.78	131.81	0.00	1.00	2
-8.71	-914.62	14.75	0.00	1.00	2
0.00	-247.42	335.59	-0.96	3.24	35
8.71	-299.78	326.34	-1.07	3.45	36
17.42	-323.04	287.52	-1.23	3.93	36
26.12	-348.06	285.27	-1.16	4.30	36
34.83	-385.08	302.96	-0.83	3.68	36
43.54	-493.03	322.96	-0.31	2.82	36
52.25	-657.30	367.40	0.29	2.90	34
60.95	-756.62	327.74	0.49	2.95	34
69.66	-814.89	263.35	-0.22	2.76	34
78.37	-838.09	246.02	-0.62	3.10	34
87.08	-847.19	246.13	-0.32	2.13	34
95.78	-830.00	278.40	-0.10	2.05	34
104.49	-794.79	271.81	0.08	2.65	34
113.20	-767.68	252.74	-0.32	2.88	34
121.91	-753.17	273.04	-0.21	2.21	34
130.61	-743.83	235.11	0.11	2.13	34
139.32	-681.17	259.39	-0.44	2.24	34
148.03	-669.40	229.28	-0.81	3.03	34
156.74	-639.99	197.58	-1.52	5.66	34
165.44	-622.88	183.62	-1.01	4.13	34
174.15	-628.30	218.57	-1.39	4.93	34

S76
ALONG PATH SPEED (knot)- crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (180deg, 800ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-43.54	64.73	0.44	0.00	1.00	2
-34.83	62.50	0.05	0.00	1.00	2
-26.12	59.94	0.83	0.00	1.00	2
-17.42	57.02	1.32	0.00	1.00	2
-8.71	53.69	1.52	0.00	1.00	2
0.00	74.39	11.60	-0.06	2.16	35
8.71	72.77	11.50	0.08	2.19	36
17.42	70.62	11.54	0.16	2.22	36
26.12	67.46	11.76	0.19	2.29	36
34.83	63.97	11.62	0.24	2.34	36
43.54	60.74	10.99	0.31	2.42	36
52.25	59.23	9.46	0.39	2.62	34
60.95	57.81	8.19	0.30	2.71	34
69.66	57.09	7.04	0.07	2.64	34
78.37	56.67	6.27	-0.10	2.61	34
87.08	56.46	5.45	-0.10	2.65	34
95.78	56.03	5.12	-0.16	2.78	34
104.49	55.23	5.08	-0.02	2.72	34
113.20	53.98	5.30	0.15	2.52	34
121.91	52.27	5.55	0.30	2.28	34
130.61	50.57	5.96	0.30	2.17	34
139.32	49.10	6.33	0.29	2.04	34
148.03	47.49	6.37	0.32	1.98	34
156.74	45.63	6.12	0.28	2.20	34
165.44	43.64	5.87	0.29	2.45	34
174.15	41.74	5.83	0.51	2.63	34

S76
ALTITUDE ERROR (ft) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-43.54	-184.39	29.75	0.00	1.00	2
-34.83	-202.55	30.90	0.00	1.00	2
-26.12	-218.23	29.55	0.00	1.00	2
-17.42	-233.50	27.88	0.00	1.00	2
-8.71	-251.45	28.89	0.00	1.00	2
0.00	-74.47	70.58	-0.81	5.24	35
8.71	-57.06	65.90	-0.34	4.22	36
17.42	-42.08	61.96	0.16	3.41	36
26.12	-27.83	59.17	0.56	3.01	36
34.83	-14.52	58.12	0.76	2.96	36
43.54	-3.11	59.21	0.78	3.03	36
52.25	1.24	62.92	0.83	3.04	34
60.95	1.63	65.62	0.88	3.08	34
69.66	0.13	67.68	0.87	3.07	34
78.37	-1.64	68.20	0.84	3.02	34
87.08	-3.39	67.81	0.84	3.02	34
95.78	-4.80	66.34	0.86	3.05	34
104.49	-5.17	64.17	0.95	3.25	34
113.20	-4.52	62.08	1.04	3.54	34
121.91	-3.79	59.84	1.10	3.77	34
130.61	-2.91	57.81	1.18	4.04	34
139.32	-1.57	56.23	1.23	4.22	34
148.03	0.68	55.01	1.28	4.41	34
156.74	3.64	53.85	1.32	4.60	34
165.44	7.13	52.32	1.35	4.81	34
174.15	10.34	49.29	1.35	4.79	34

S76
RADIAL ERROR (ft) - crv
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (180deg, 800ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated on angle positions in degrees counted from the beginning of turns.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

ANG POSITION	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
-43.54	235.87	82.42	0.00	1.00	2
-34.83	207.44	84.52	0.00	1.00	2
-26.12	181.29	81.92	0.00	1.00	2
-17.42	156.17	73.80	0.00	1.00	2
-8.71	132.15	62.55	0.00	1.00	2
0.00	169.64	103.26	0.52	2.95	35
8.71	167.77	109.46	0.57	2.82	36
17.42	175.55	121.88	0.55	2.52	36
26.12	190.26	137.45	0.44	2.32	36
34.83	206.15	153.64	0.34	2.30	36
43.54	218.37	168.14	0.27	2.41	36
52.25	235.43	176.87	0.20	2.76	34
60.95	228.40	190.23	0.26	2.91	34
69.66	213.24	202.70	0.31	2.93	34
78.37	192.79	210.75	0.32	2.91	34
87.08	167.99	212.53	0.31	2.87	34
95.78	141.23	207.30	0.28	2.82	34
104.49	114.62	195.20	0.19	2.74	34
113.20	89.69	177.88	0.06	2.64	34
121.91	67.58	157.17	-0.11	2.56	34
130.61	46.21	131.44	-0.39	2.54	34
139.32	24.43	103.56	-0.69	2.80	34
148.03	4.95	78.11	-0.97	3.36	34
156.74	-9.00	58.35	-1.20	4.23	34
165.44	-16.17	46.50	-1.01	4.09	34
174.15	-15.50	42.16	0.55	5.53	34

S76
FLIGHT ALTITUDE (ft) - str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (180deg, 800ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1 These statistics were estimated at locations in ft on Extended Center Line from Heliport.
2 Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
787.85	148.57	44.66	1.31	4.63	35
689.37	133.39	39.73	1.26	4.51	35
590.88	118.27	35.22	1.23	4.53	35
492.40	102.67	30.26	1.25	4.73	35
393.92	86.20	24.60	1.30	5.01	35
295.44	69.12	18.90	1.33	5.18	35
196.96	51.47	13.57	0.93	4.25	35
98.48	32.25	9.66	0.00	2.51	34

S76
ALONG TRACK VELOCITY(KNOT) -str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (180deg, 800ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
787.85	39.74	6.15	0.47	2.40	35
689.37	38.37	5.80	0.67	2.65	35
590.88	36.36	5.56	0.68	2.77	35
492.40	33.85	5.30	0.80	3.16	35
393.92	30.64	4.92	0.90	3.52	35
295.44	26.72	4.52	0.67	3.32	35
196.96	22.00	4.21	0.29	2.30	35
98.48	15.36	4.06	0.36	3.47	34

S76
CROSS TRACK ERROR (ft) - str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (180deg, 800ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

1. These statistics were estimated at locations in ft on Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
787.85	-7.28	38.46	1.94	10.01	35
689.37	-0.84	35.17	2.43	11.76	35
590.88	1.22	32.01	2.19	10.57	35
492.40	1.12	29.33	1.72	8.29	35
393.92	-0.15	27.15	1.24	6.41	35
295.44	-1.42	23.84	0.94	4.45	35
196.96	-4.01	21.25	0.39	2.51	35
98.48	-8.35	18.41	0.07	1.86	34

S76
ALTITUDE ERROR (ft) - str
STATISTIC DATA : MEAN, StanDARD DEVIATION, SKEWNWSS, and KURTOSIS

PATH (180deg, 800ft)
CURVED APPROACH FLIGHT TESTS STARTED 1992

data provided by HELICOPTER's GROUP
FAA TECH CNTR, Atlantic City Airport, NJ.

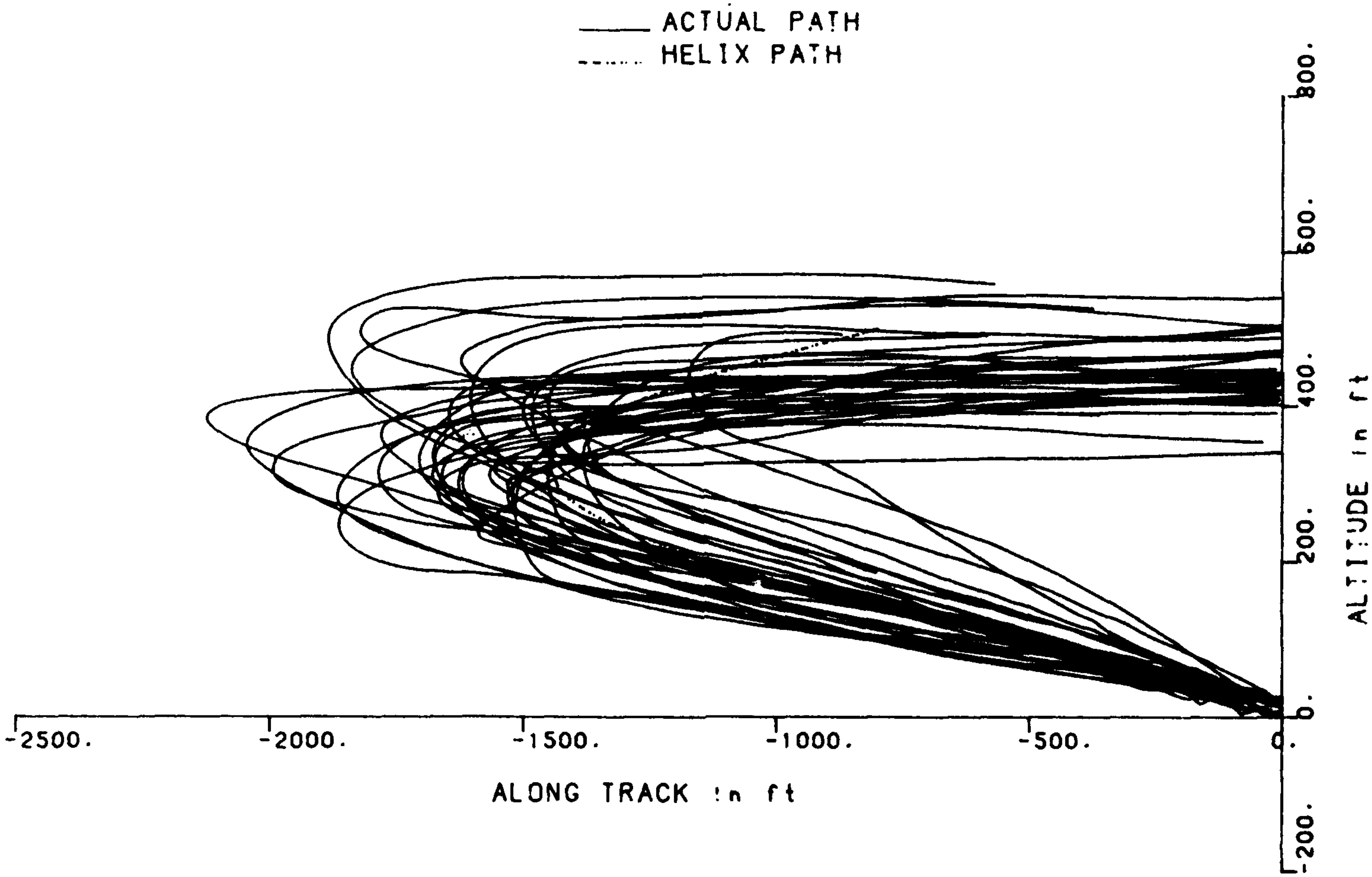
1. These statistics were estimated at locations in ft on
Extended Center Line from Heliport.
2. Errors are calculated as (Actual - Planned);
'- 'on speed or velocity means reducing.

DIST->PORT	MEAN	STD	SKEWNESS	KURTOSIS	DATA COUNT
787.85	10.73	44.62	1.31	4.61	35
689.37	12.83	39.31	1.21	4.37	35
590.88	14.88	34.51	1.13	4.34	35
492.40	16.51	29.42	1.11	4.50	35
393.92	17.40	23.81	1.09	4.69	35
295.44	17.73	18.51	1.06	4.73	35
196.96	17.77	13.94	0.55	3.74	35
98.48	16.72	11.15	-0.12	2.39	34

APPENDIX D
COMPOSITE PLOTS

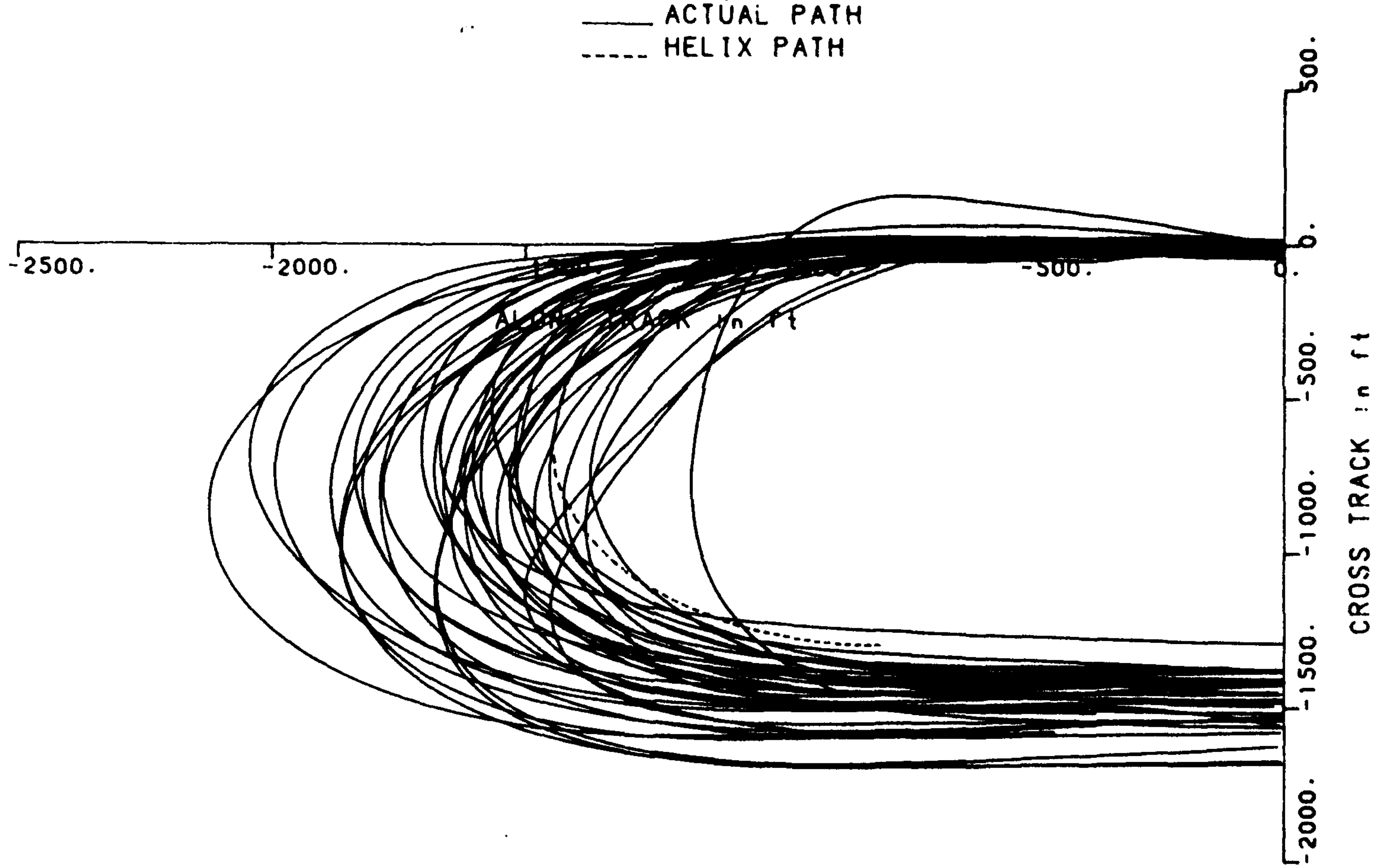
DATA PROVIDED BY
ACD330. FAA TECH CENTER
ATLANTIC CITY AIRPORT. NJ. 08405

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
COMPOSITE PLOT (180deg 800ft)
VERTICAL PATH - S76
NUMBER OF PATHS : 36



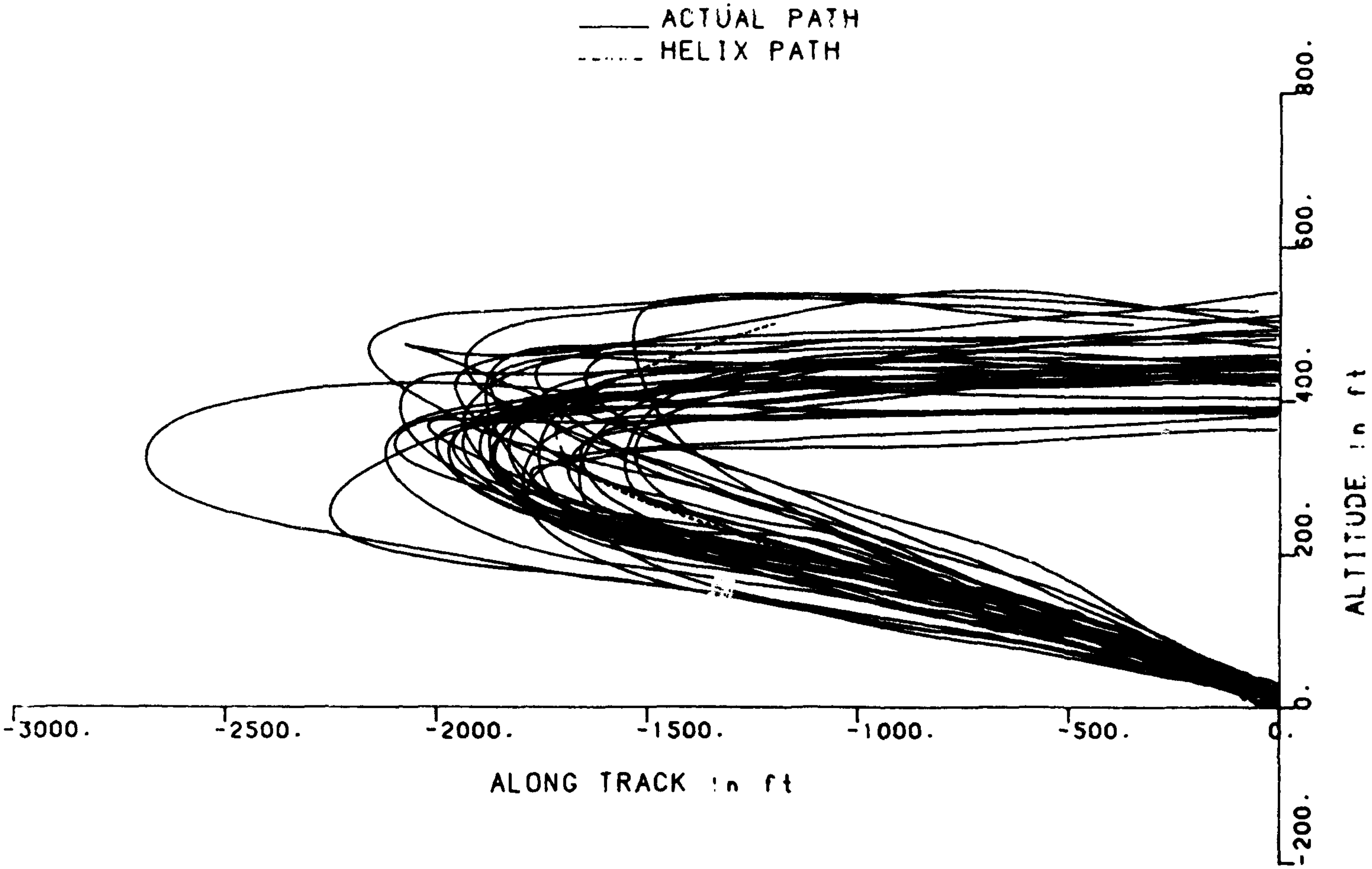
DATA PROVIDED BY
ACD330. FAA TECH CENTER
ATLANTIC CITY AIRPORT. NJ. 08405

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
COMPOSITE PLOT (180deg 800ft)
LATERAL PATH - S76
NUMBER OF PATHS : 36



DATA PROVIDED BY
ACD330. FAA TECH CENTER
ATLANTIC CITY AIRPORT, NJ. 08405

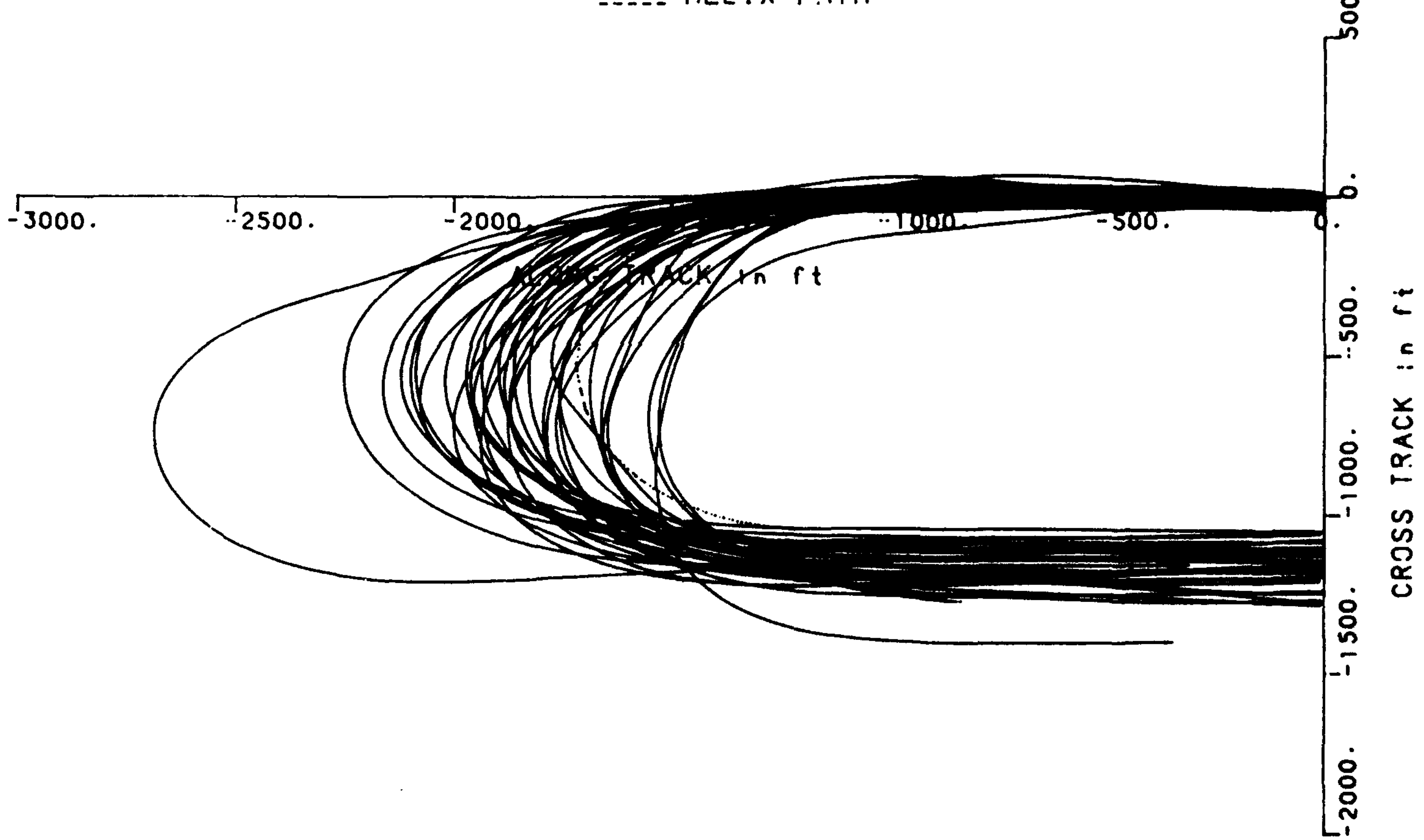
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
COMPOSITE PLOT (180deg 1200ft)
VERTICAL PATH - S76
NUMBER OF PATHS : 35



DATA PROVIDED BY
ACD330. FAA TECH CENTER
ATLANTIC CITY AIRPORT. NJ. 08405

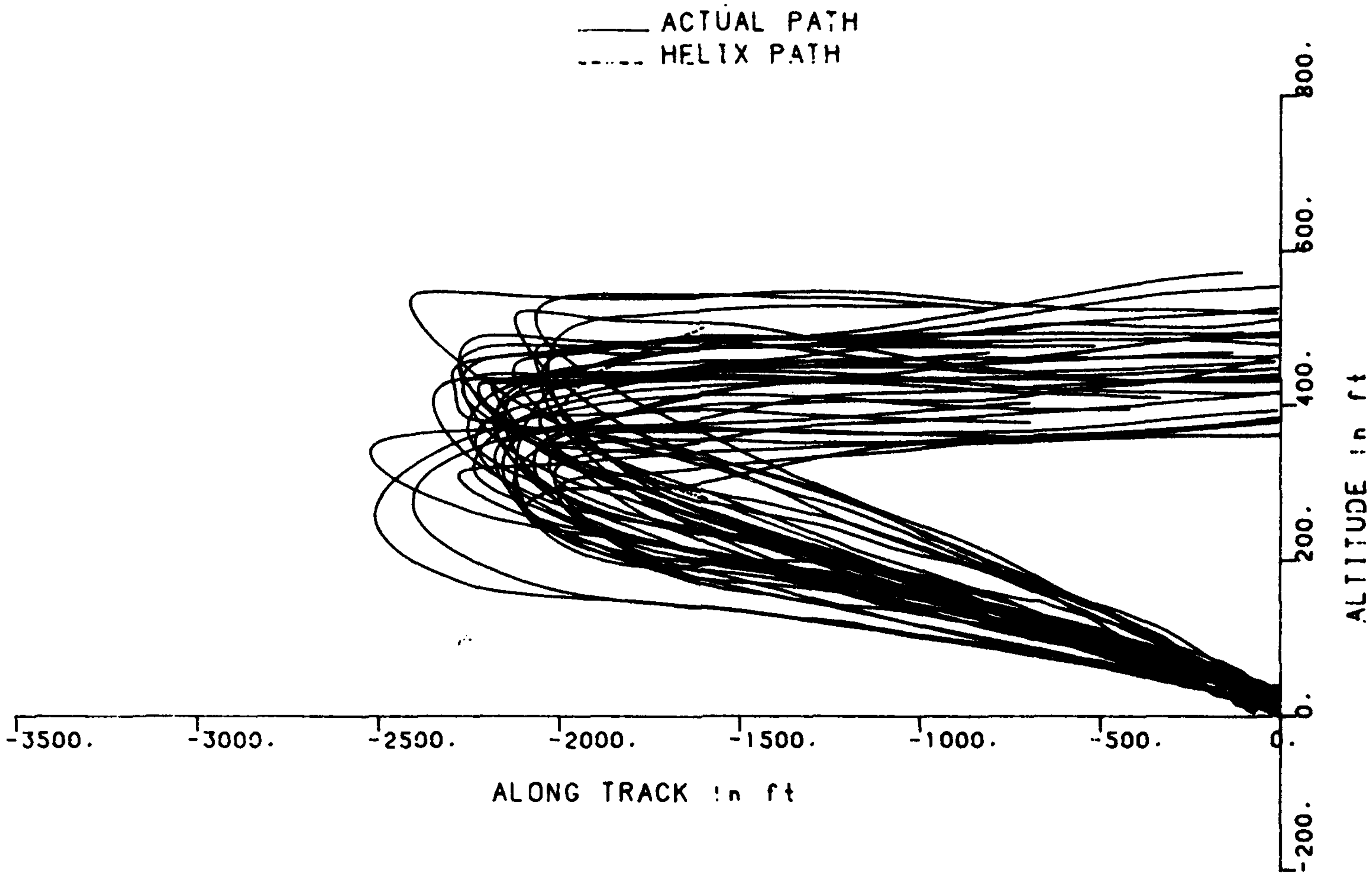
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
COMPOSITE PLOT (180deg 1200ft)
LATERAL PATH - S76
NUMBER OF PATHS : 35

_____ ACTUAL PATH
----- HELIX PATH



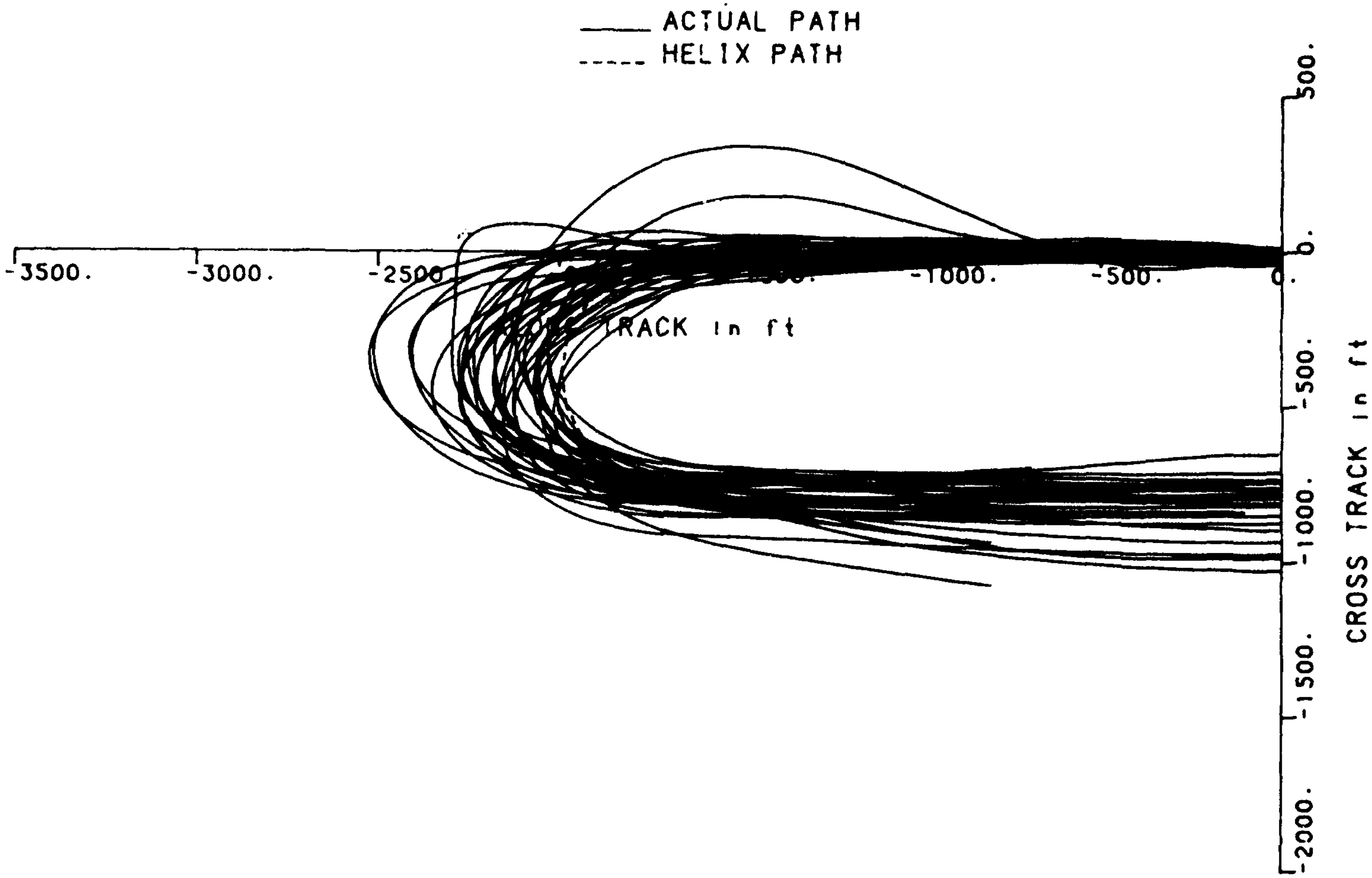
DATA PROVIDED BY
ACD330. FAA TECH CENTER
ATLANTIC CITY AIRPORT. NJ. 08405

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
COMPOSITE PLOT (180deg 1600ft)
VERTICAL PATH - S76
NUMBER OF PATHS : 36



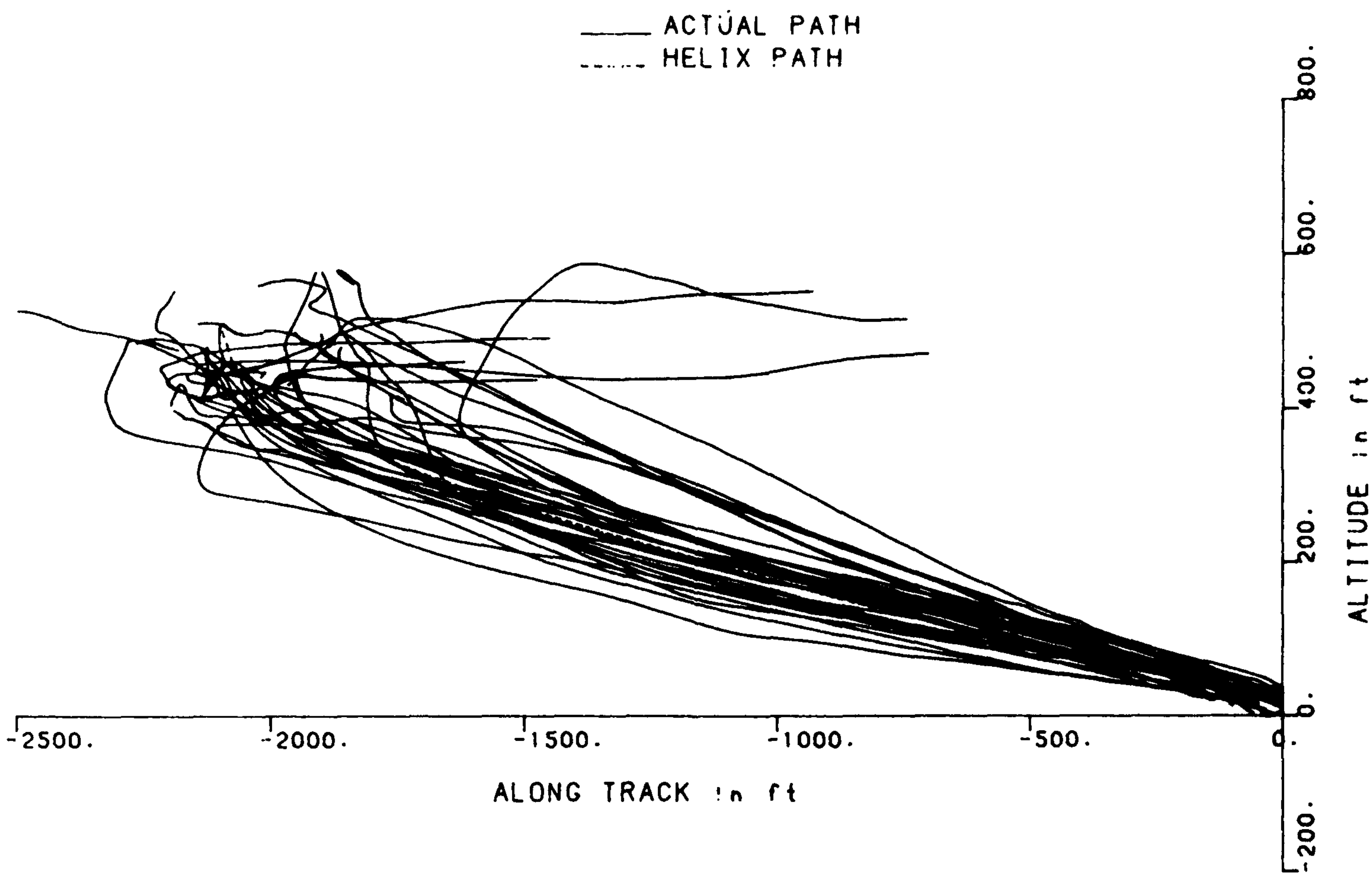
DATA PROVIDED BY
ACD330, FAA TECH CENTER
ATLANTIC CITY AIRPORT, NJ. 08405

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
COMPOSITE PLOT (180deg 1600ft)
LATERAL PATH - S76
NUMBER OF PATHS : 36



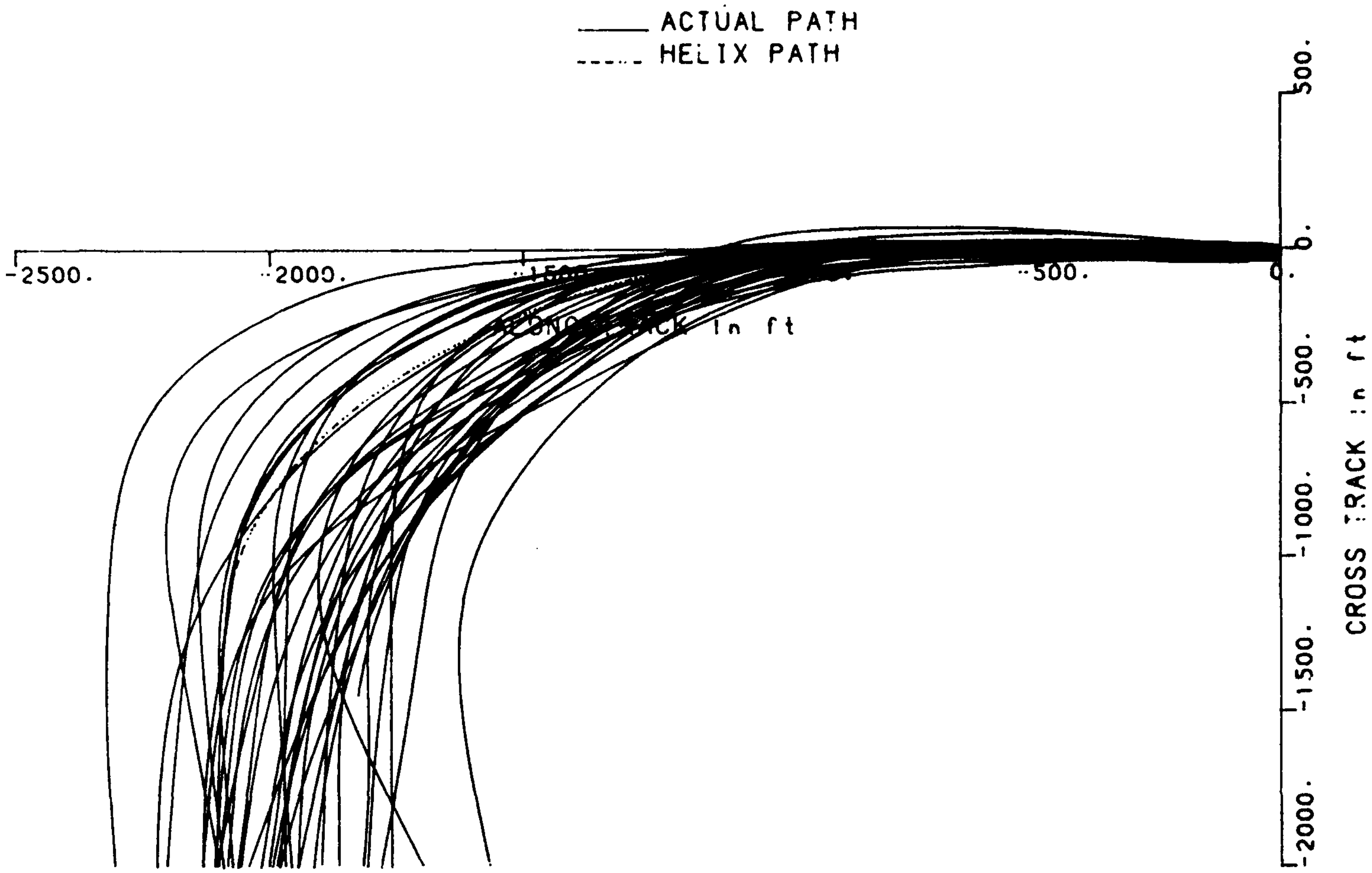
DATA PROVIDED BY
ACD330. FAA TECH CENTER
ATLANTIC CITY AIRPORT. NJ. 08405

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
COMPOSITE PLOT (90deg 800ft)
VERTICAL PATH - S76
NUMBER OF PATHS : 36



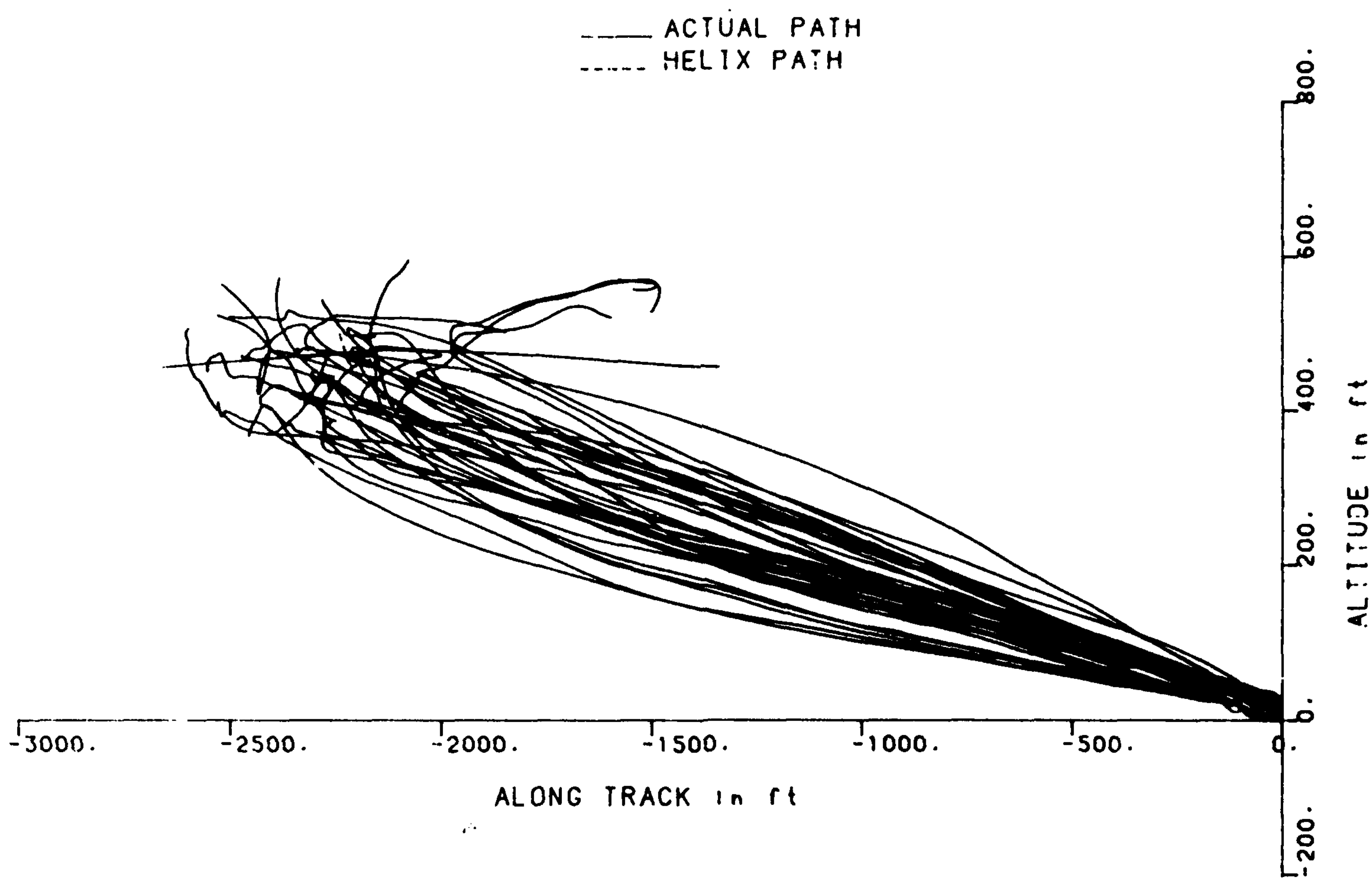
DATA PROVIDED BY
ACD330, FAA TECH CENTER
ATLANTIC CITY AIRPORT, NJ. 08405

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
COMPOSITE PLOT (90deg 800ft)
LATERAL PATH - S76
NUMBER OF PATHS : 36



DATA PROVIDED BY
ACD330, FAA TECH CENTER
ATLANTIC CITY AIRPORT, NJ. 08405

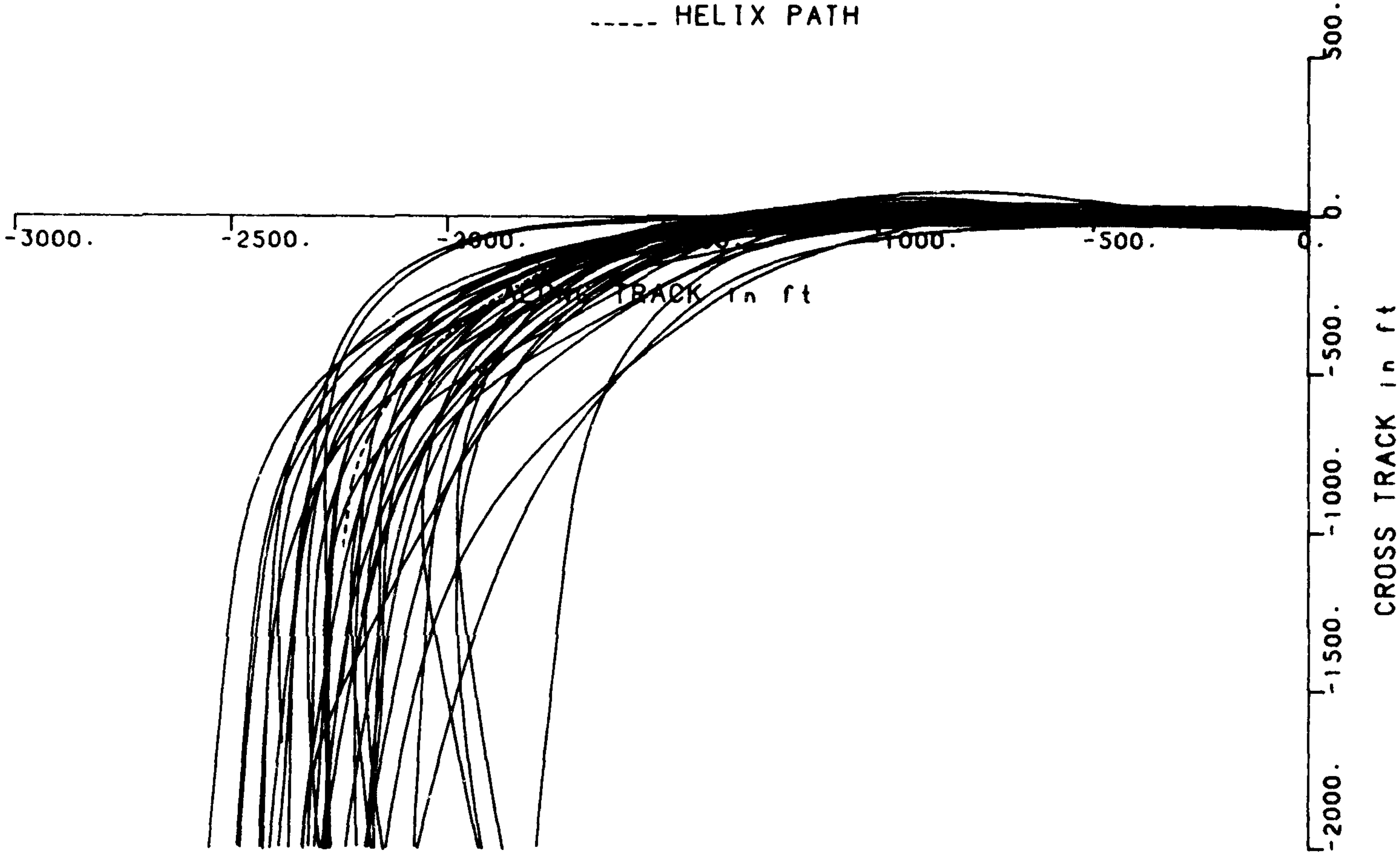
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
COMPOSITE PLOT (90deg 1200ft)
VERTICAL PATH - S76
NUMBER OF PATHS : 36



DATA PROVIDED BY
ACD330. FAA TECH CENTER
ATLANTIC CITY AIRPORT. NJ. 08405

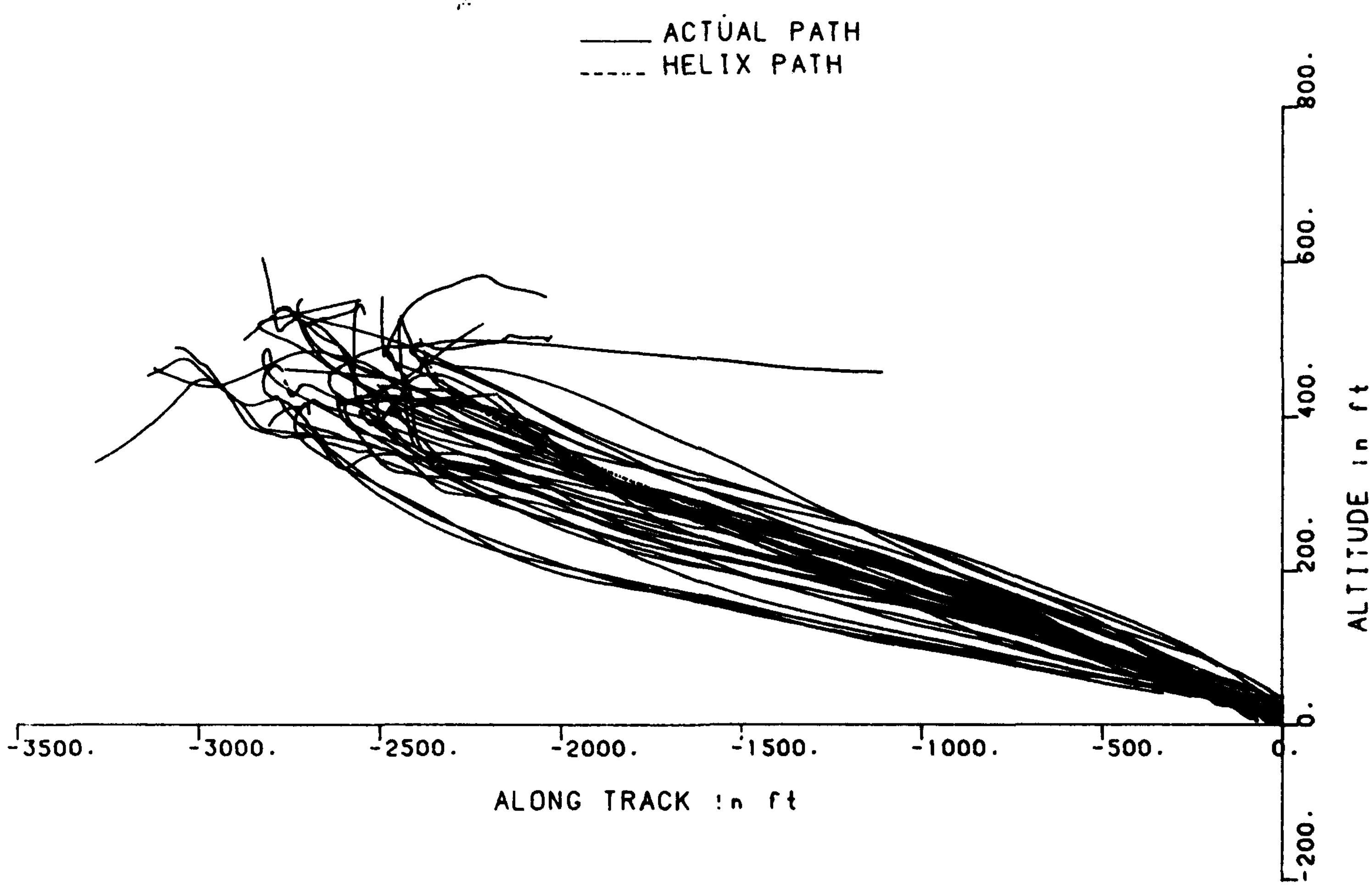
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
COMPOSITE PLOT (90deg 1200ft)
LATERAL PATH - S76
NUMBER OF PATHS : 36

—— ACTUAL PATH
----- HELIX PATH



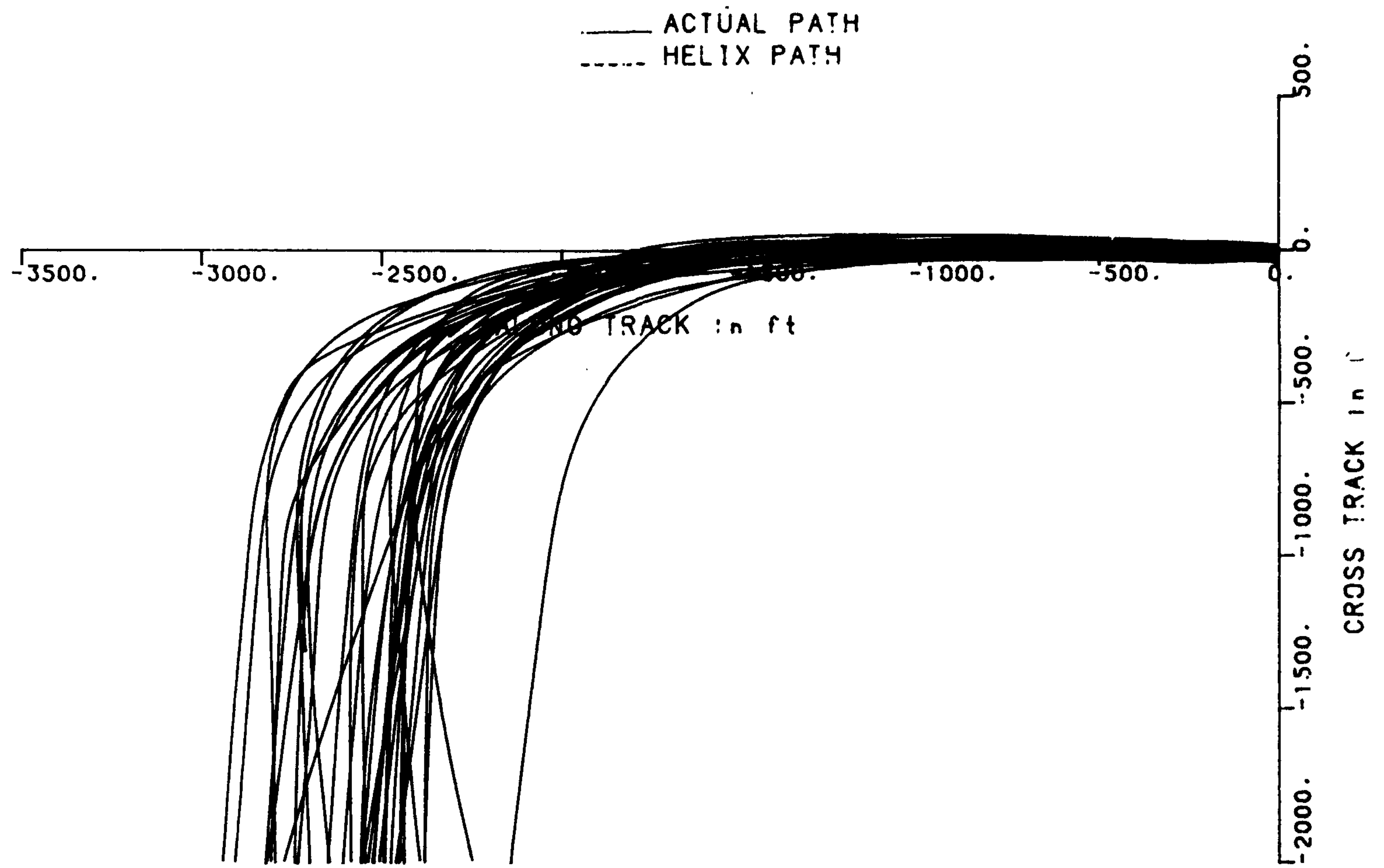
DATA PROVIDED BY
ACD330. FAA TECH CENTER
ATLANTIC CITY AIRPORT. NJ. 08405

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
COMPOSITE PLOT (90deg 1600ft)
VERTICAL PATH - S76
NUMBER OF PATHS : 36



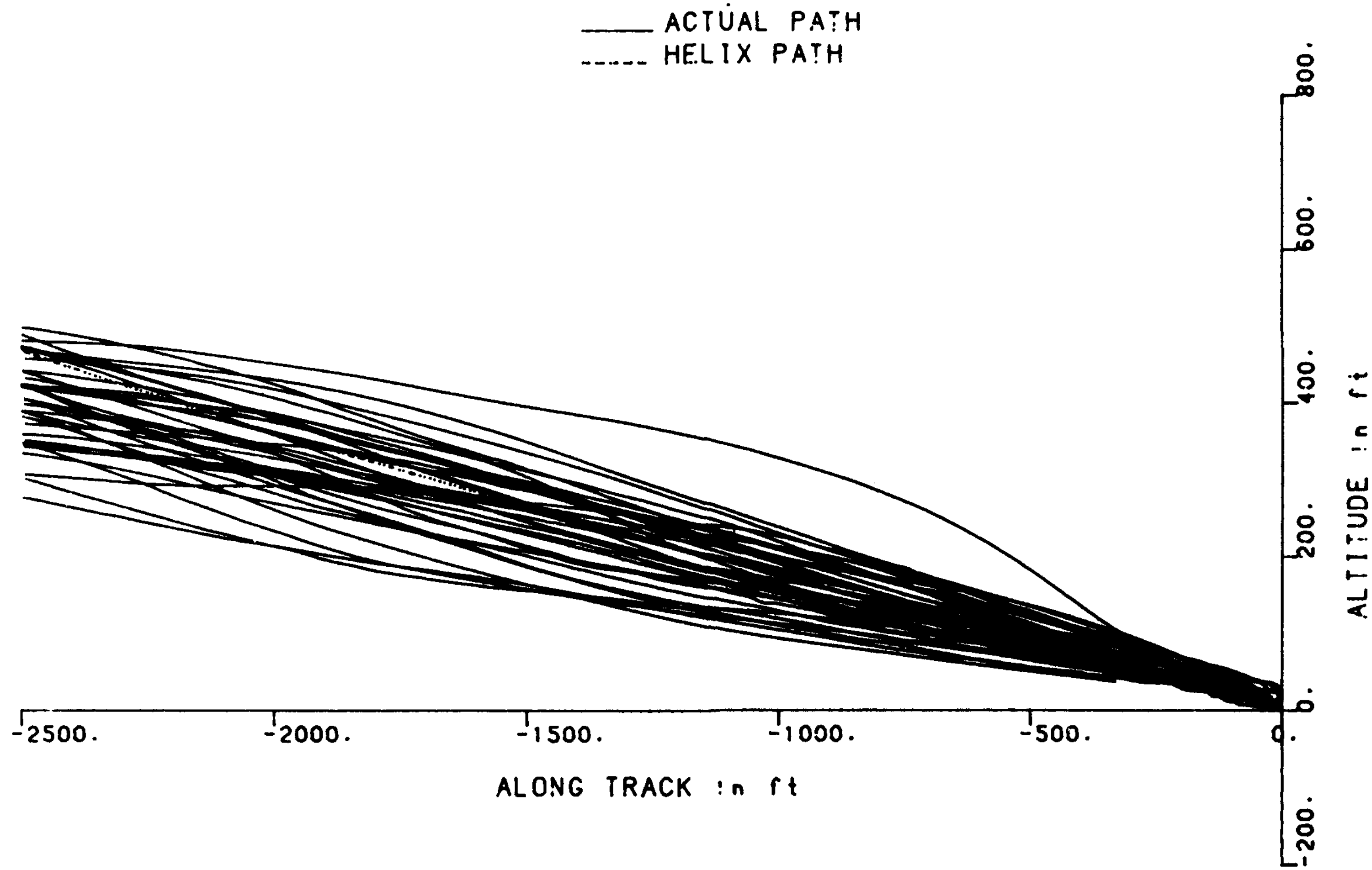
DATA PROVIDED BY
ACD330. FAA TECH CENTER
ATLANTIC CITY AIRPORT. NJ. 08405

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
COMPOSITE PLOT (90deg 1600ft)
LATERAL PATH - S76
NUMBER OF PATHS : 36



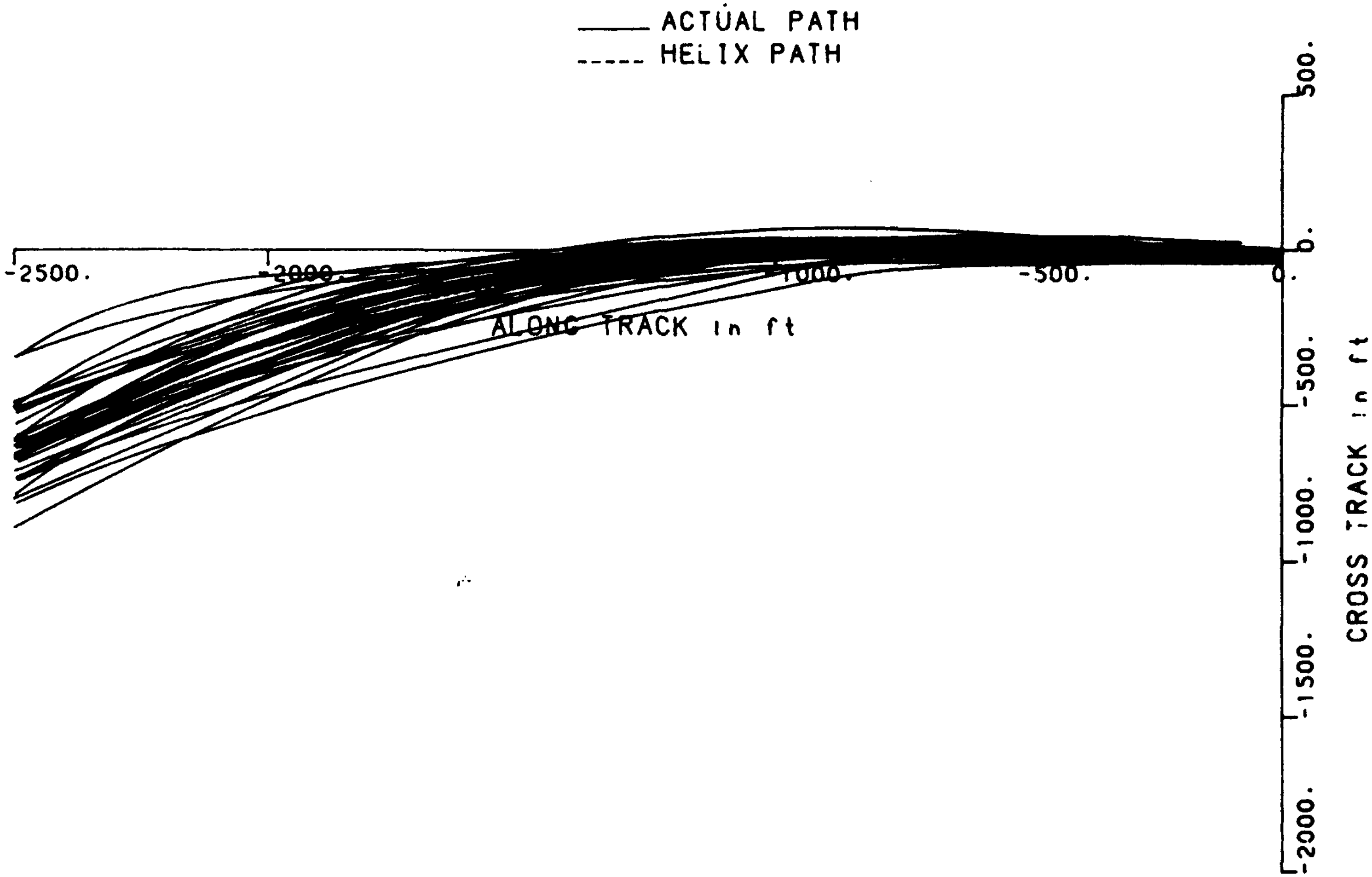
DATA PROVIDED BY
ACD330. FAA TECH CENTER
ATLANTIC CITY AIRPORT. NJ. 08405

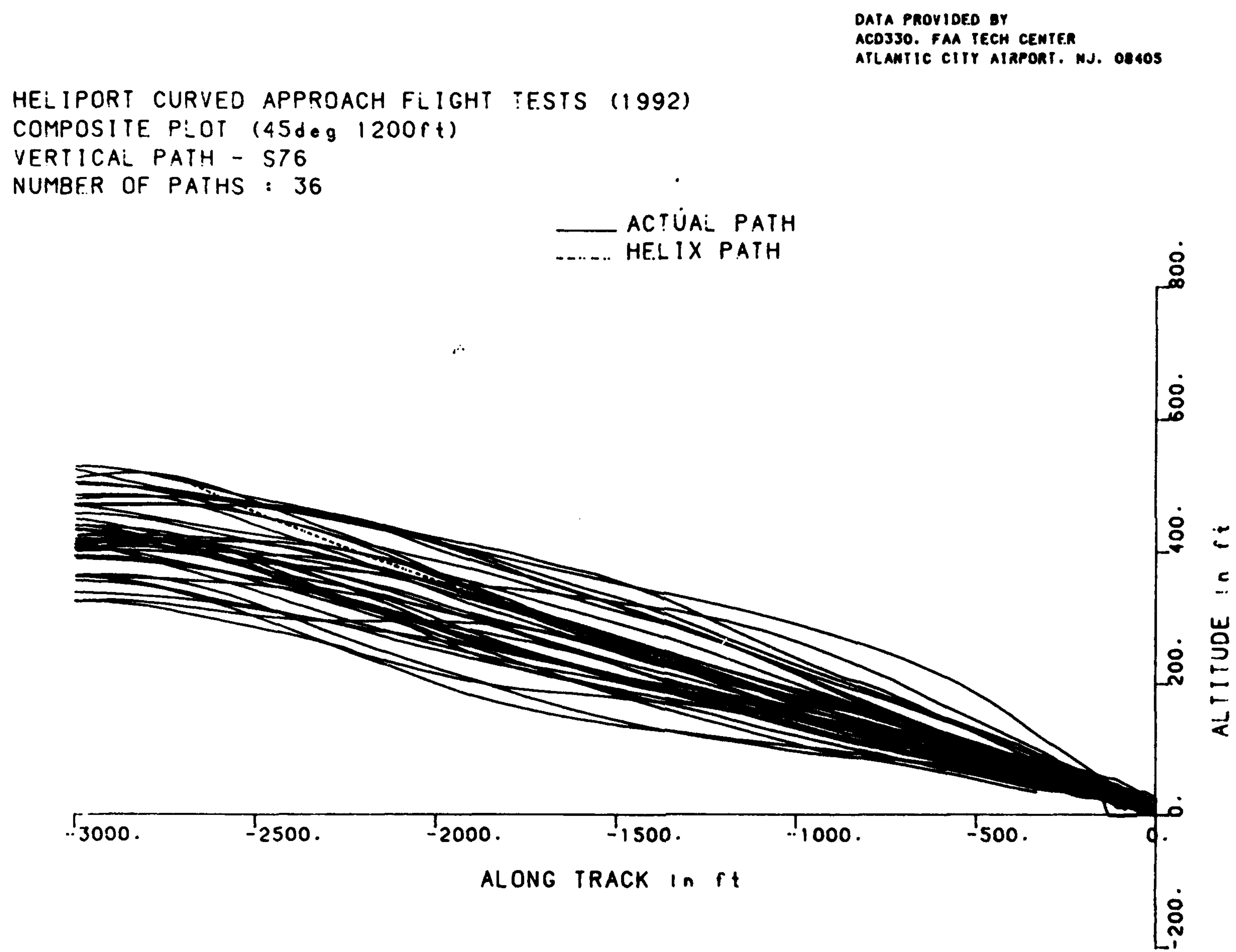
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
COMPOSITE PLOT (45deg 800ft)
VERTICAL PATH - S76
NUMBER OF PATHS : 36



DATA PROVIDED BY
ACD330, FAA TECH CENTER
ATLANTIC CITY AIRPORT, NJ. 08405

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
COMPOSITE PLOT (45deg 800ft)
LATERAL PATH - S76
NUMBER OF PATHS : 36

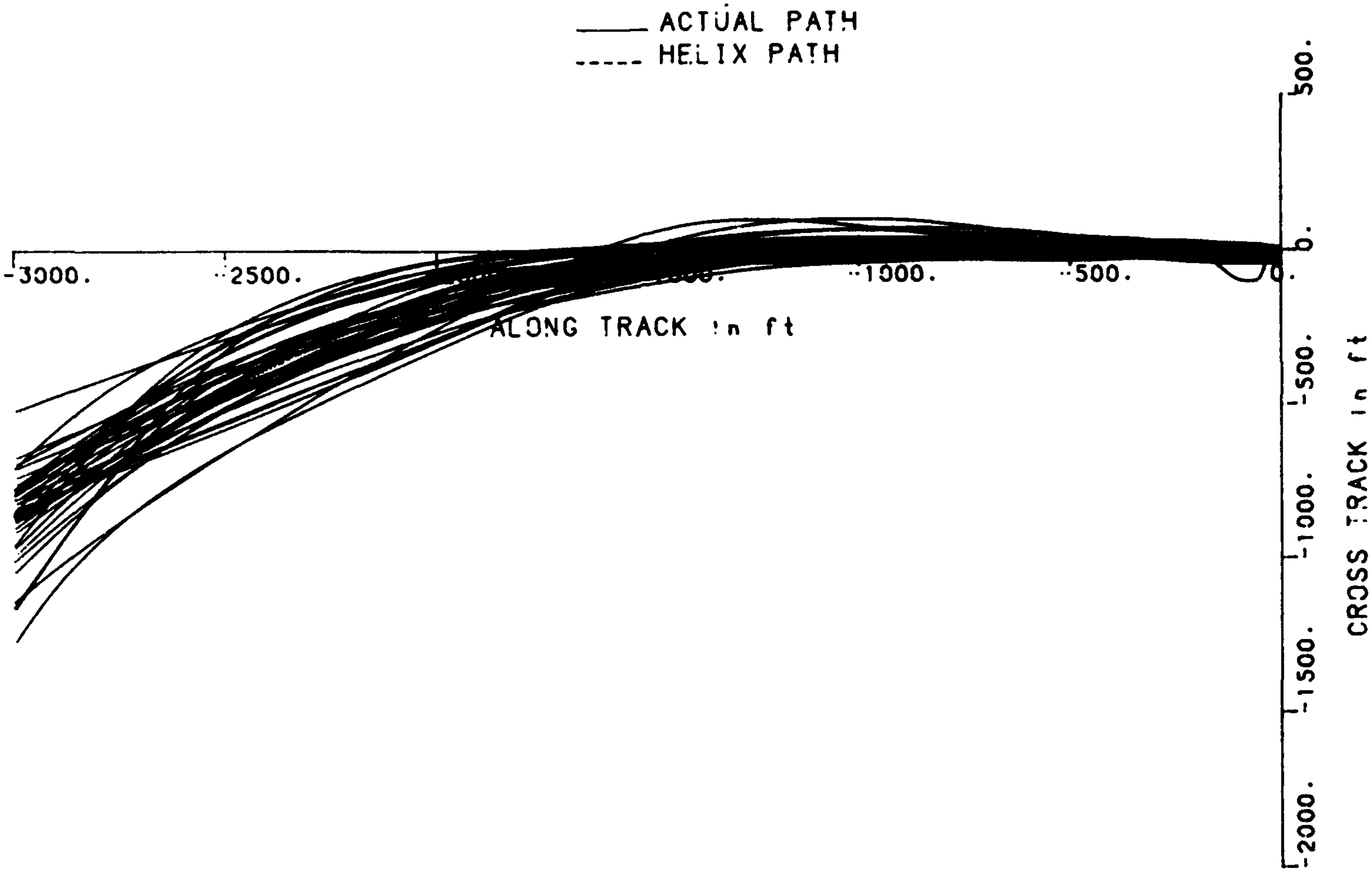




DATA PROVIDED BY
ACD330. FAA TECH CENTER
ATLANTIC CITY AIRPORT. NJ. 08405
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
COMPOSITE PLOT (45deg 1200ft)
VERTICAL PATH - S76
NUMBER OF PATHS : 36
ACTUAL PATH
HELIX PATH
800.
600.
400.
200.
0.
-200.
ALTITUDE in ft
-3000.
-2500.
-2000.
-1500.
-1000.
-500.
0.
ALONG TRACK in ft

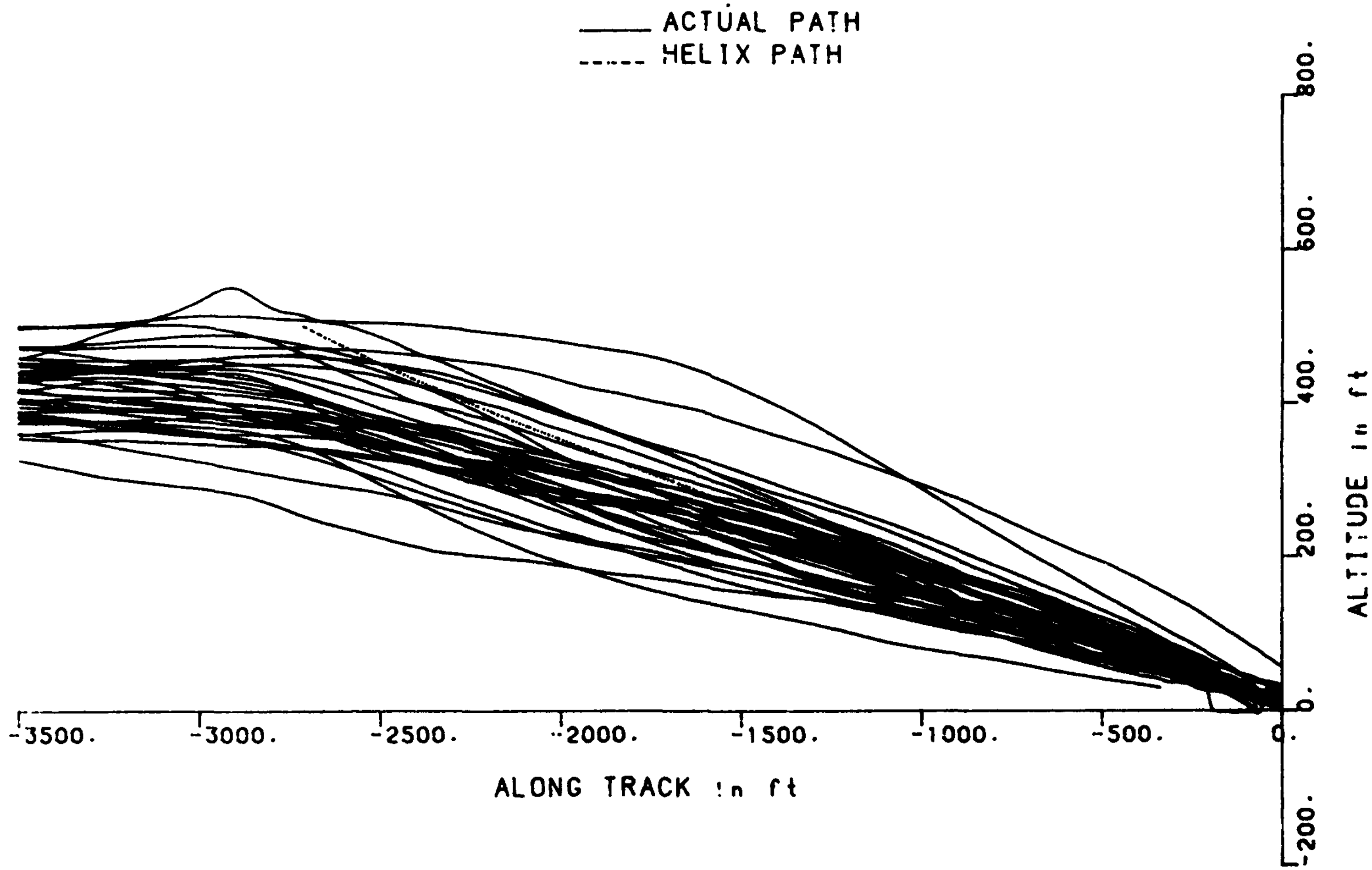
DATA PROVIDED BY
ACD330. FAA TECH CENTER
ATLANTIC CITY AIRPORT. NJ. 08405

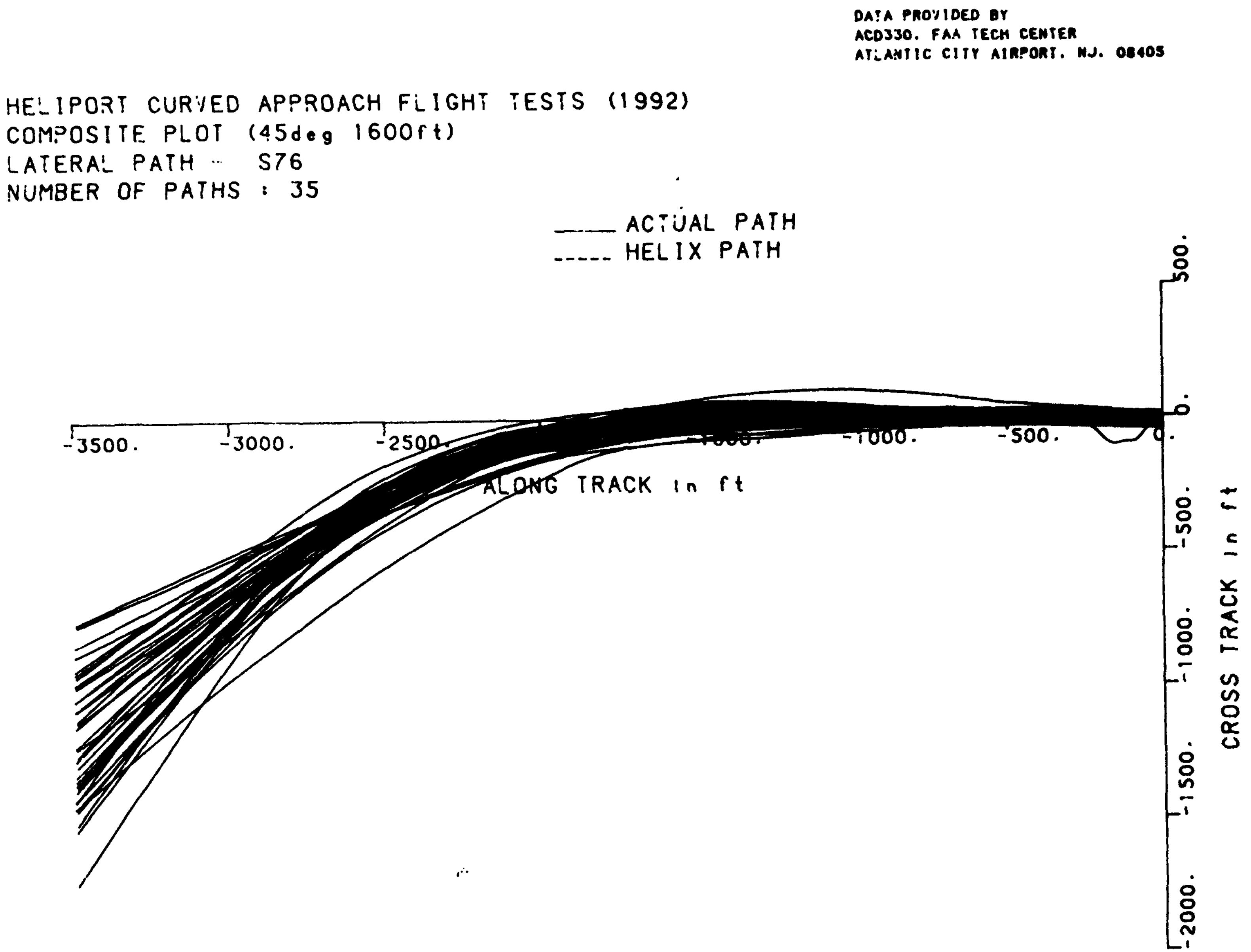
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
COMPOSITE PLOT (45deg 1200ft)
LATERAL PATH - S76
NUMBER OF PATHS : 36



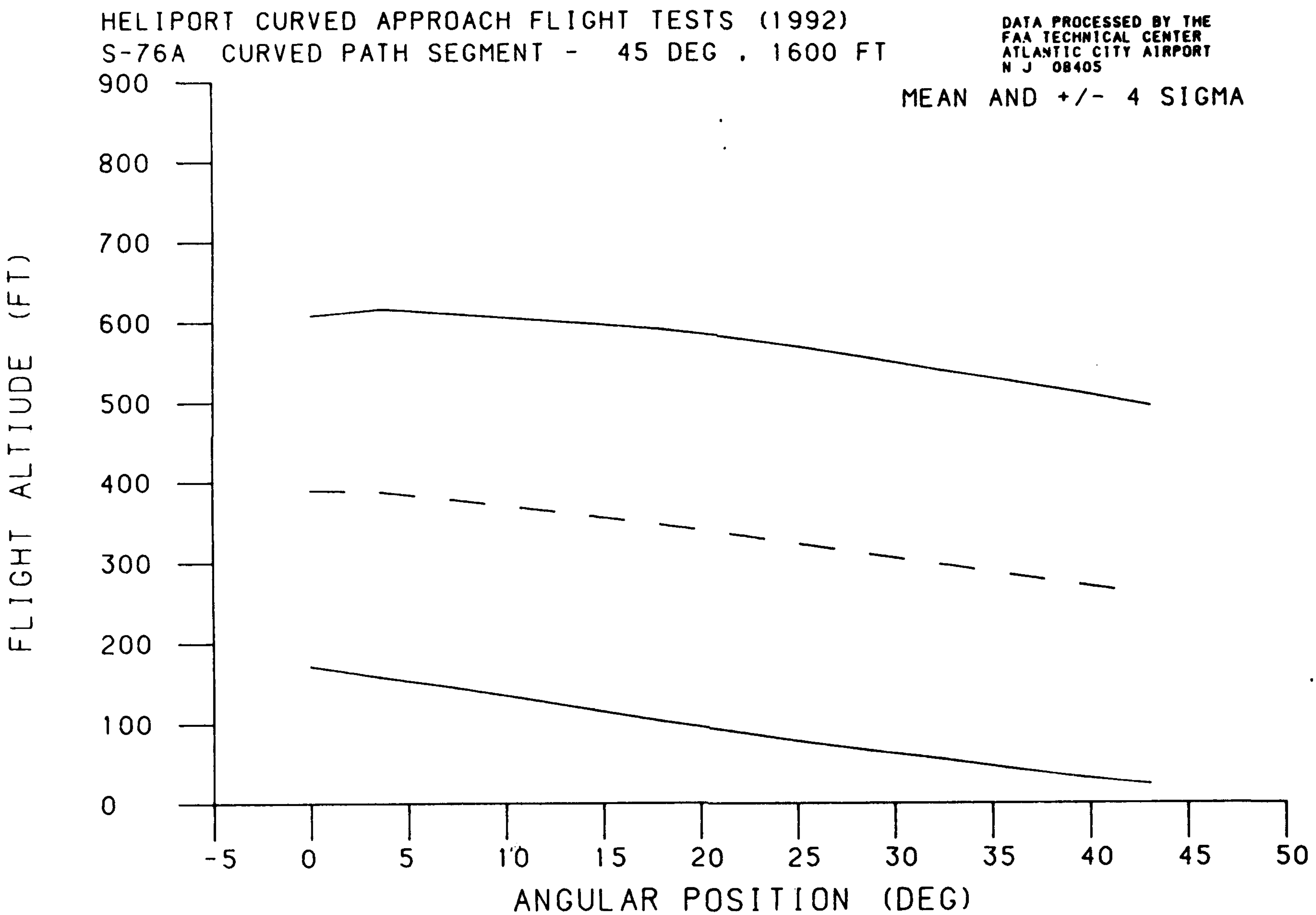
DATA PROVIDED BY
ACD330. FAA TECH CENTER
ATLANTIC CITY AIRPORT. NJ. 08405

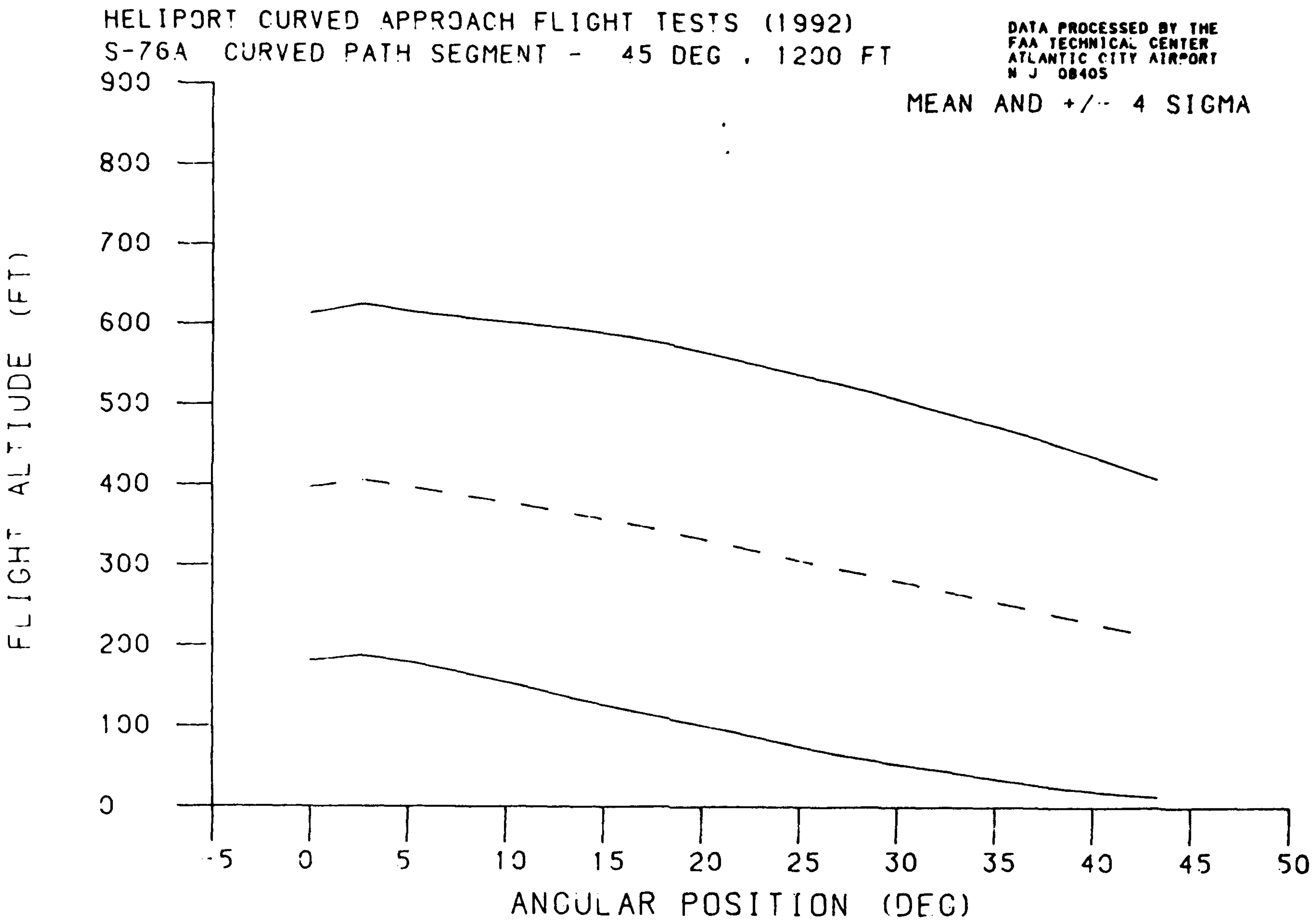
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
COMPOSITE PLOT (45deg 1600ft)
VERTICAL PATH - S76
NUMBER OF PATHS : 35



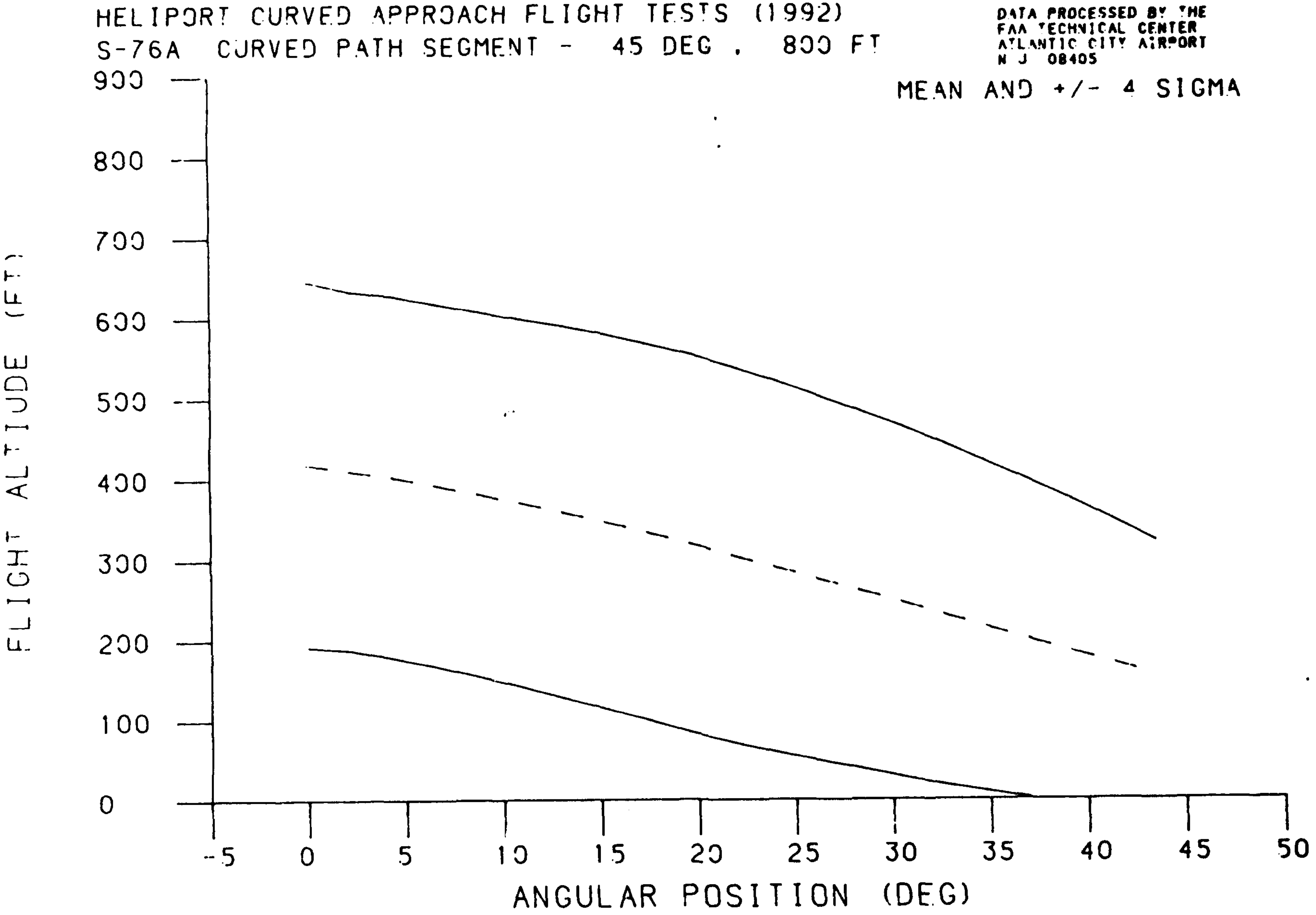

DATA PROVIDED BY
ACD330. FAA TECH CENTER
ATLANTIC CITY AIRPORT. NJ. 08405
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
COMPOSITE PLOT (45deg 1600ft)
LATERAL PATH - S76
NUMBER OF PATHS : 35
ACTUAL PATH
HELIX PATH
-3500.
-3000.
-2500.
-1000.
-500.
0.
ALONG TRACK in ft
500.
0.
-500.
-1000.
-1500.
-2000.
CROSS TRACK in ft

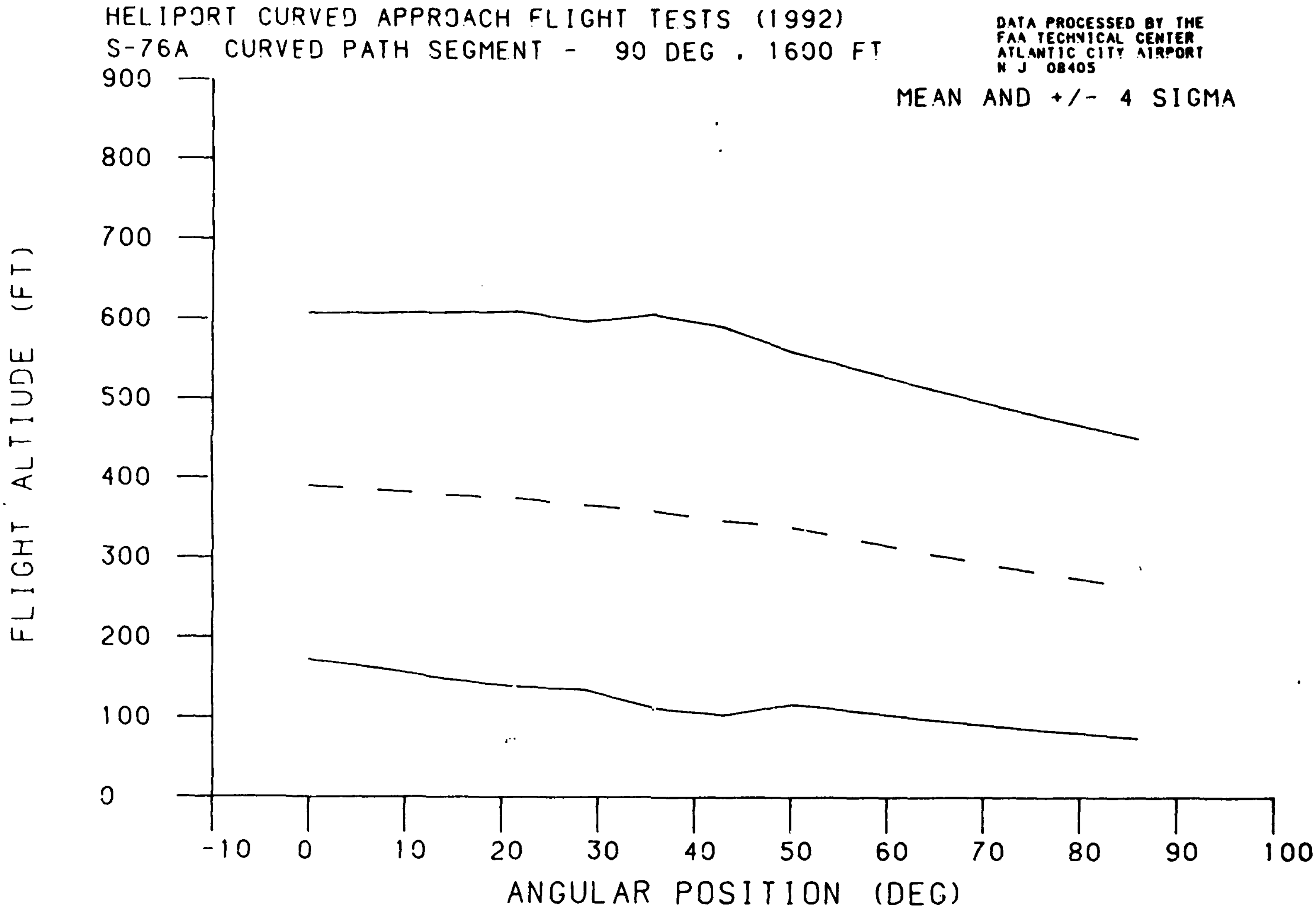
APPENDIX E
STATISTICAL PLOTS

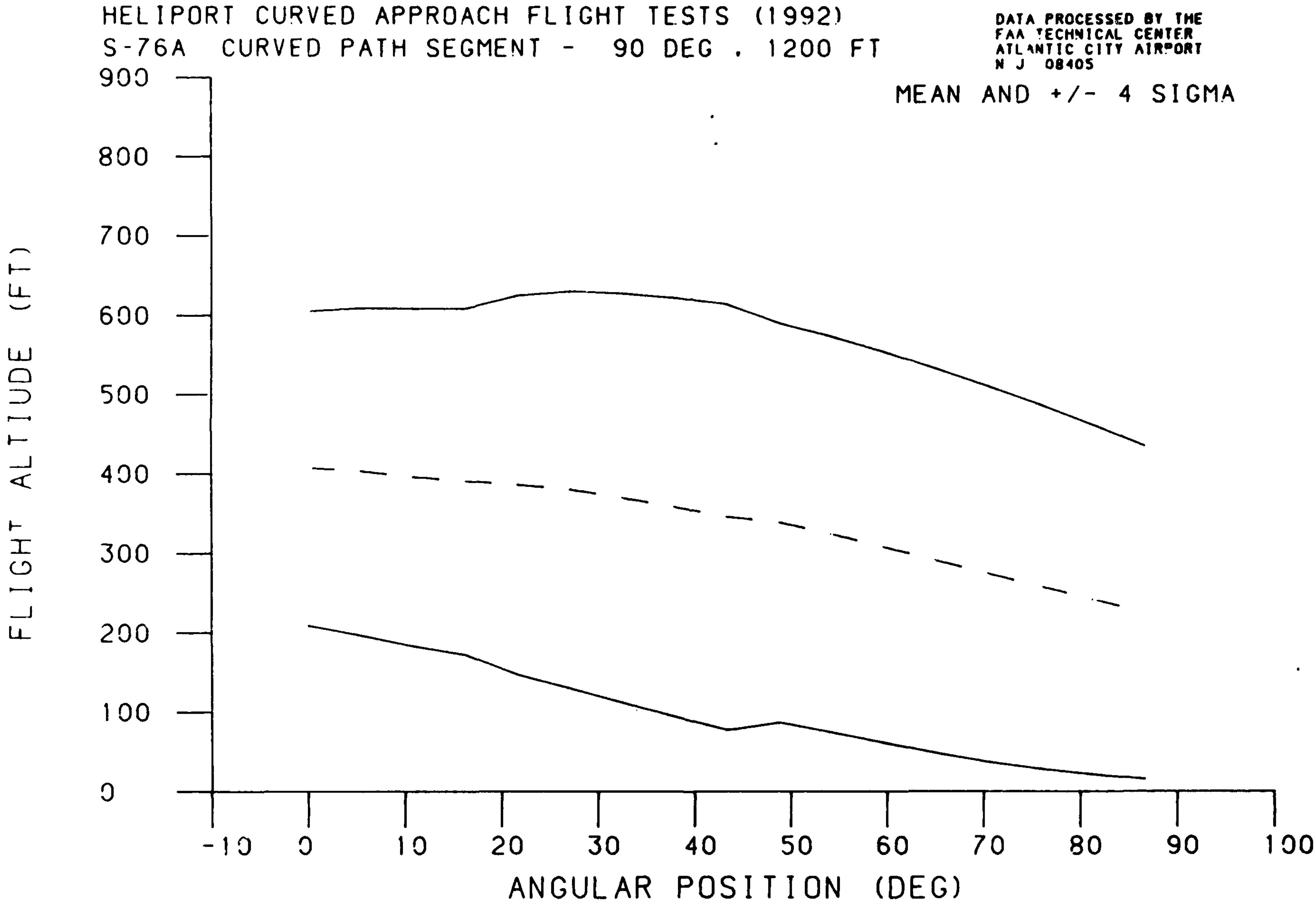

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG , 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
FLIGHT ALTIUDE (FT)
900
800
700
600
500
400
300
200
100
0
-5
0
5
10
15
20
25
30
35
40
45
50
ANGULAR POSITION (DEG)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG , 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
FLIGHT ALTITUDE (FT)
0
100
200
300
400
500
600
700
800
900
ANGULAR POSITION (DEG)
-5
0
5
10
15
20
25
30
35
40
45
50

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG , 800 FT

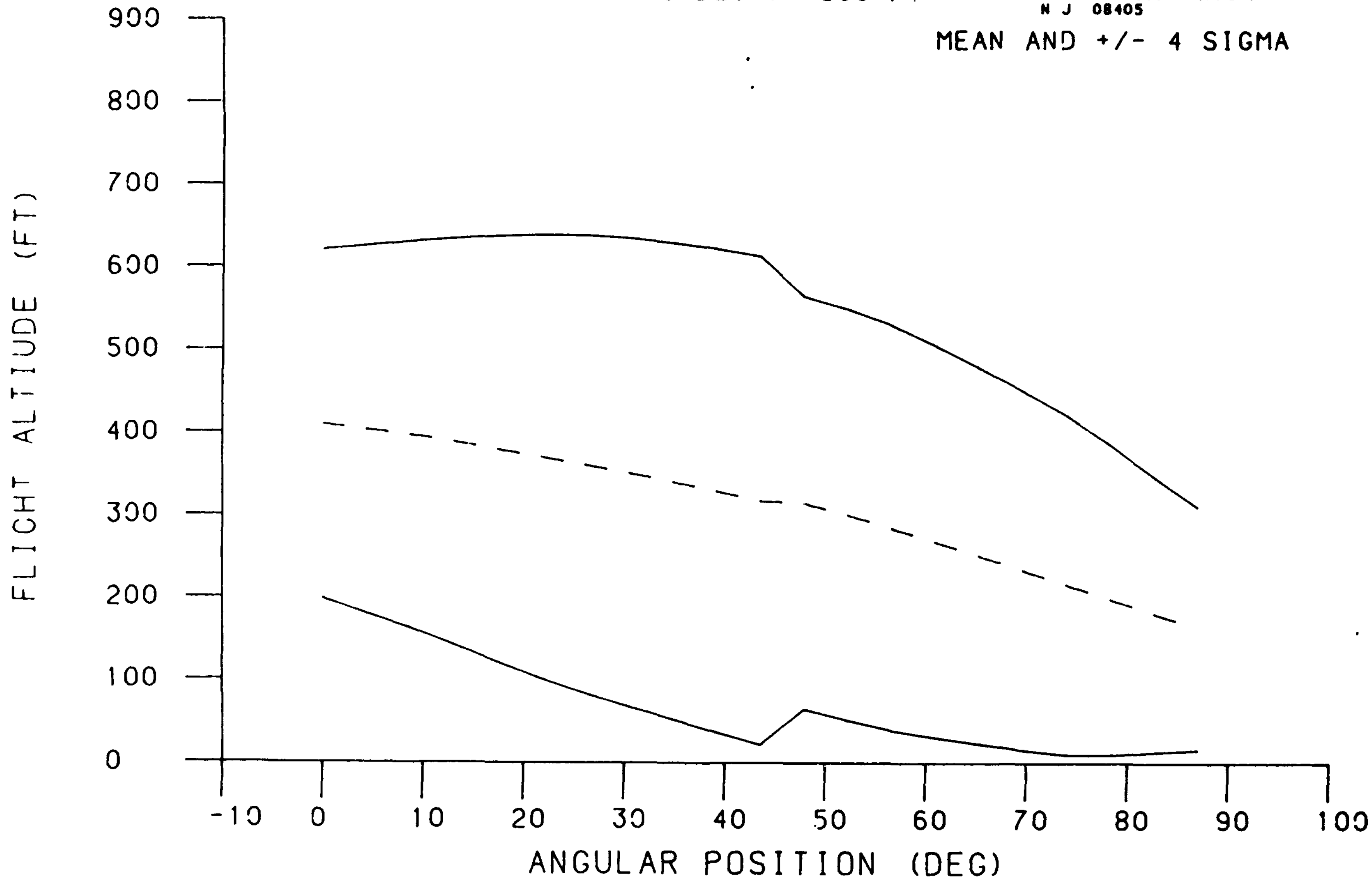


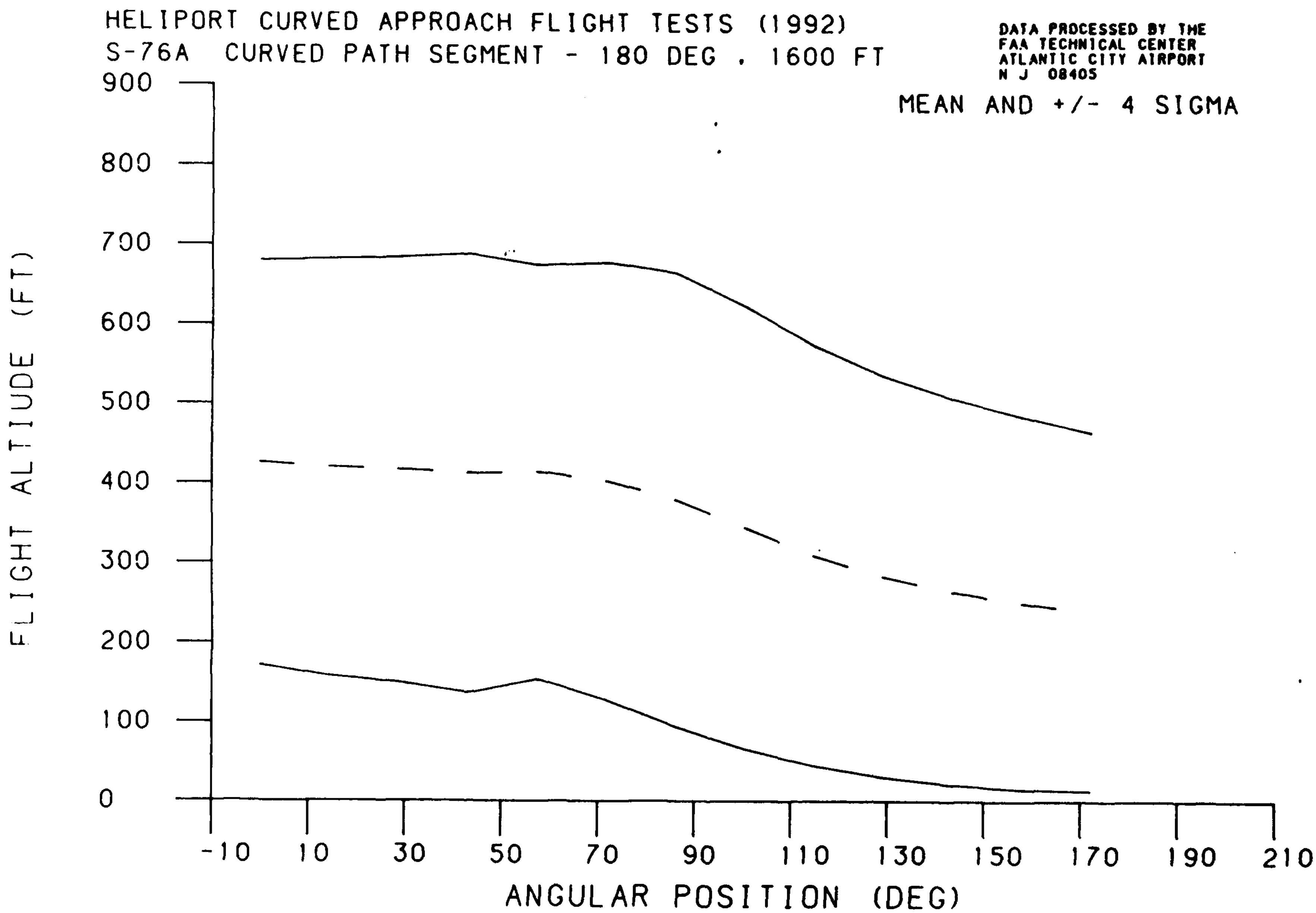

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG , 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
FLIGHT ALTIUDE (FT)
0
100
200
300
400
500
600
700
800
900
-10
0
10
20
30
40
50
60
70
80
90
100
ANGULAR POSITION (DEG)

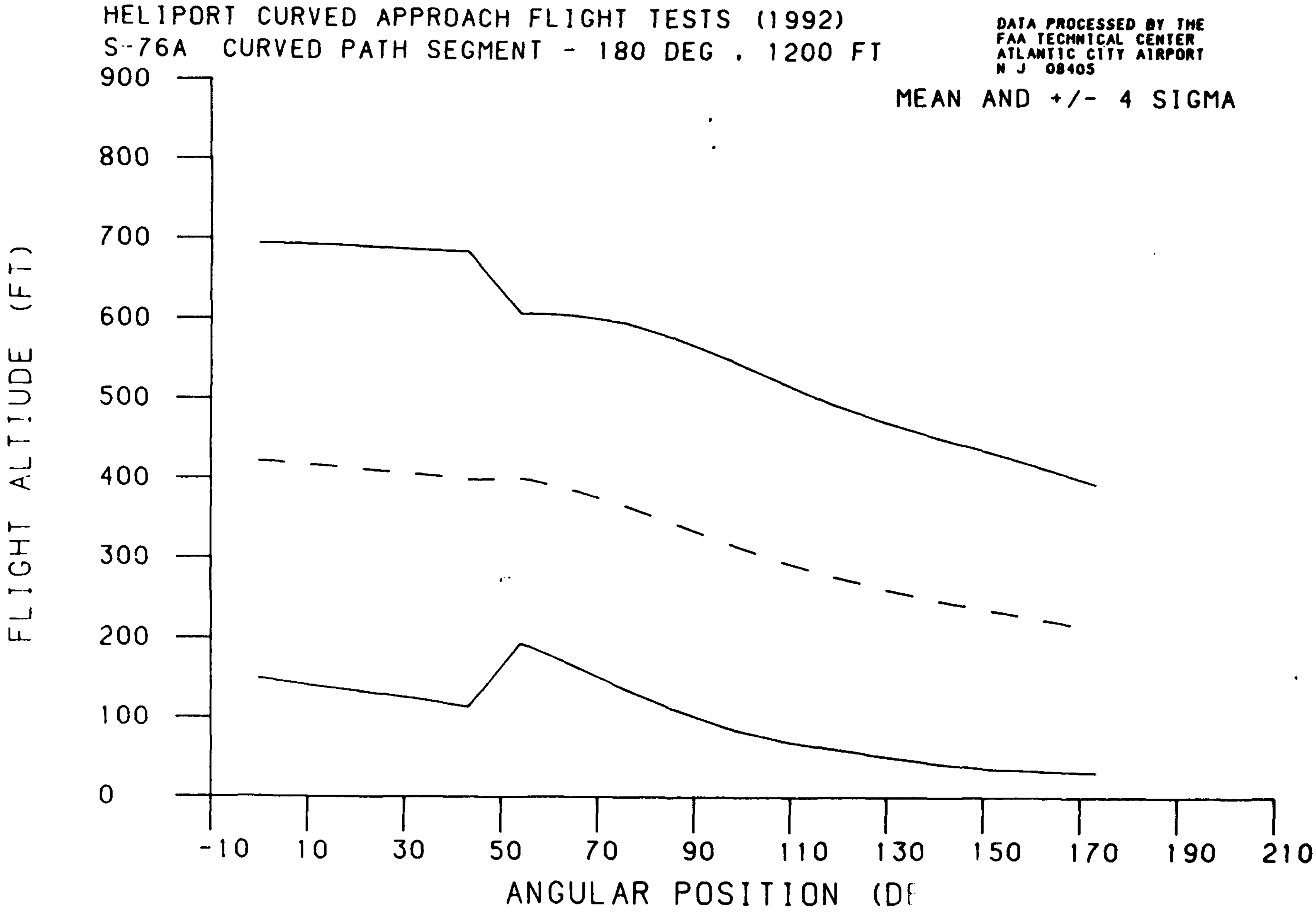

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG . 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
FLIGHT ALTIUDE (FT)
900
800
700
600
500
400
300
200
100
0
-10
0
10
20
30
40
50
60
70
80
90
100
ANGULAR POSITION (DEG)

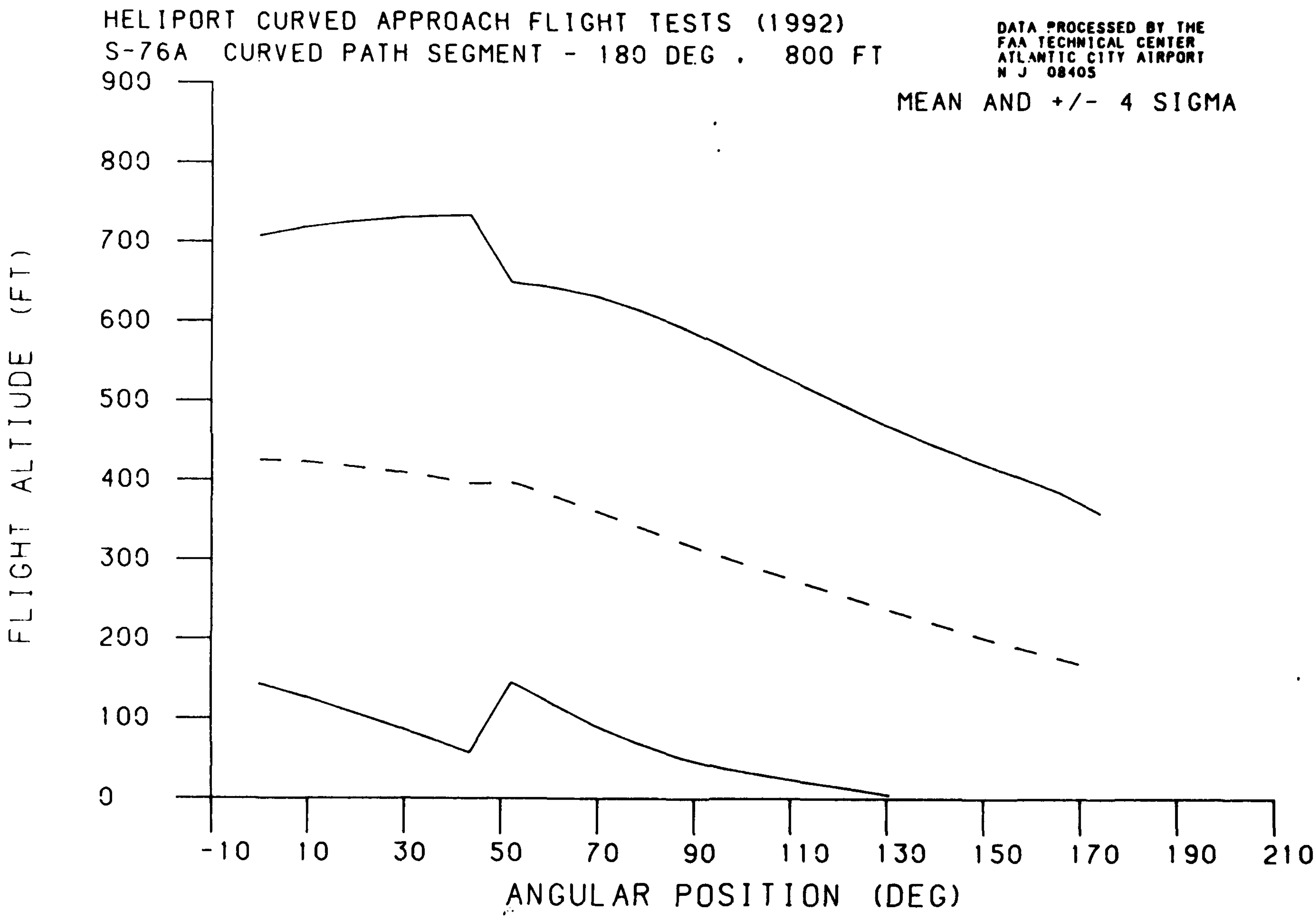
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG , 800 FT

DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405

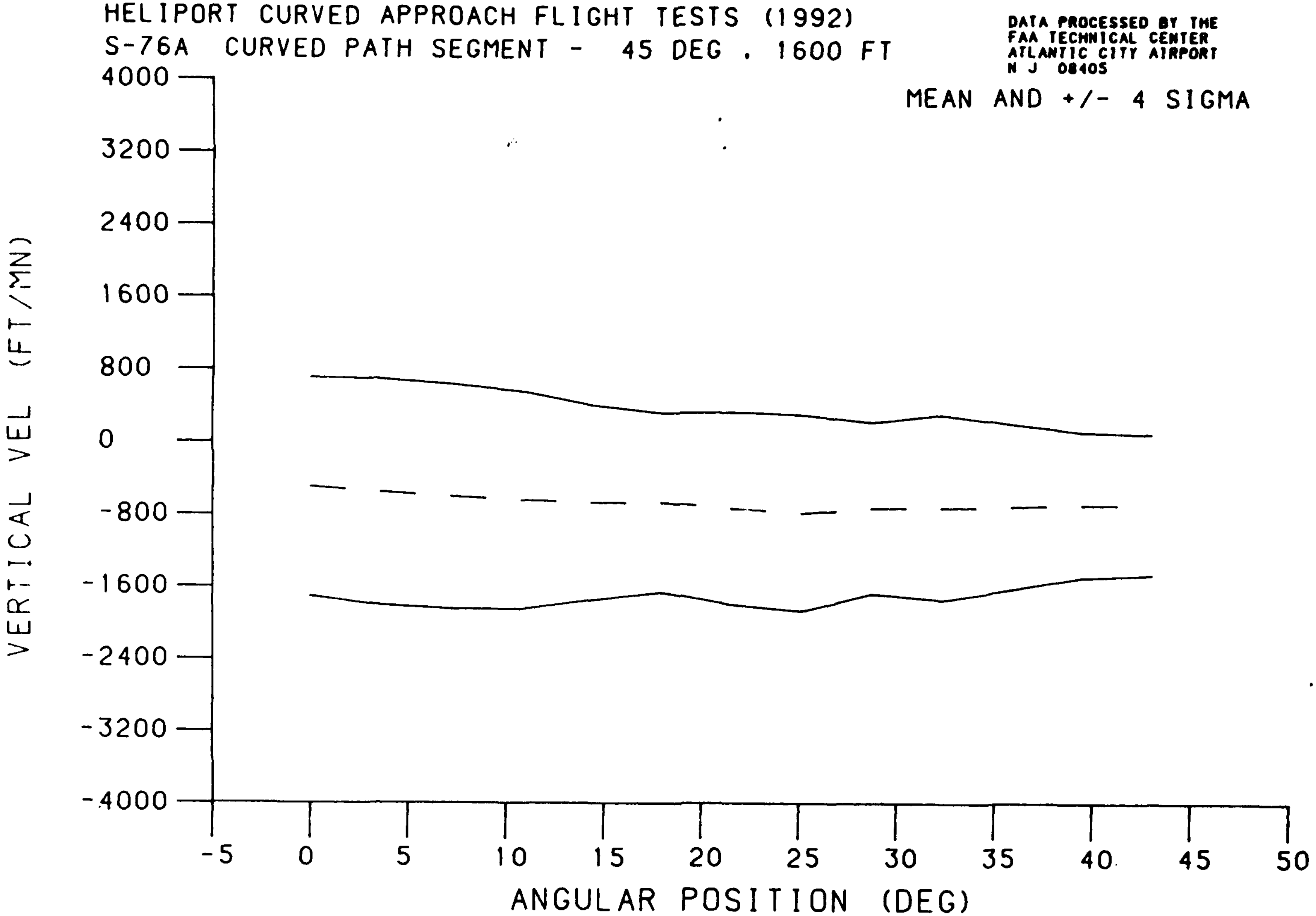


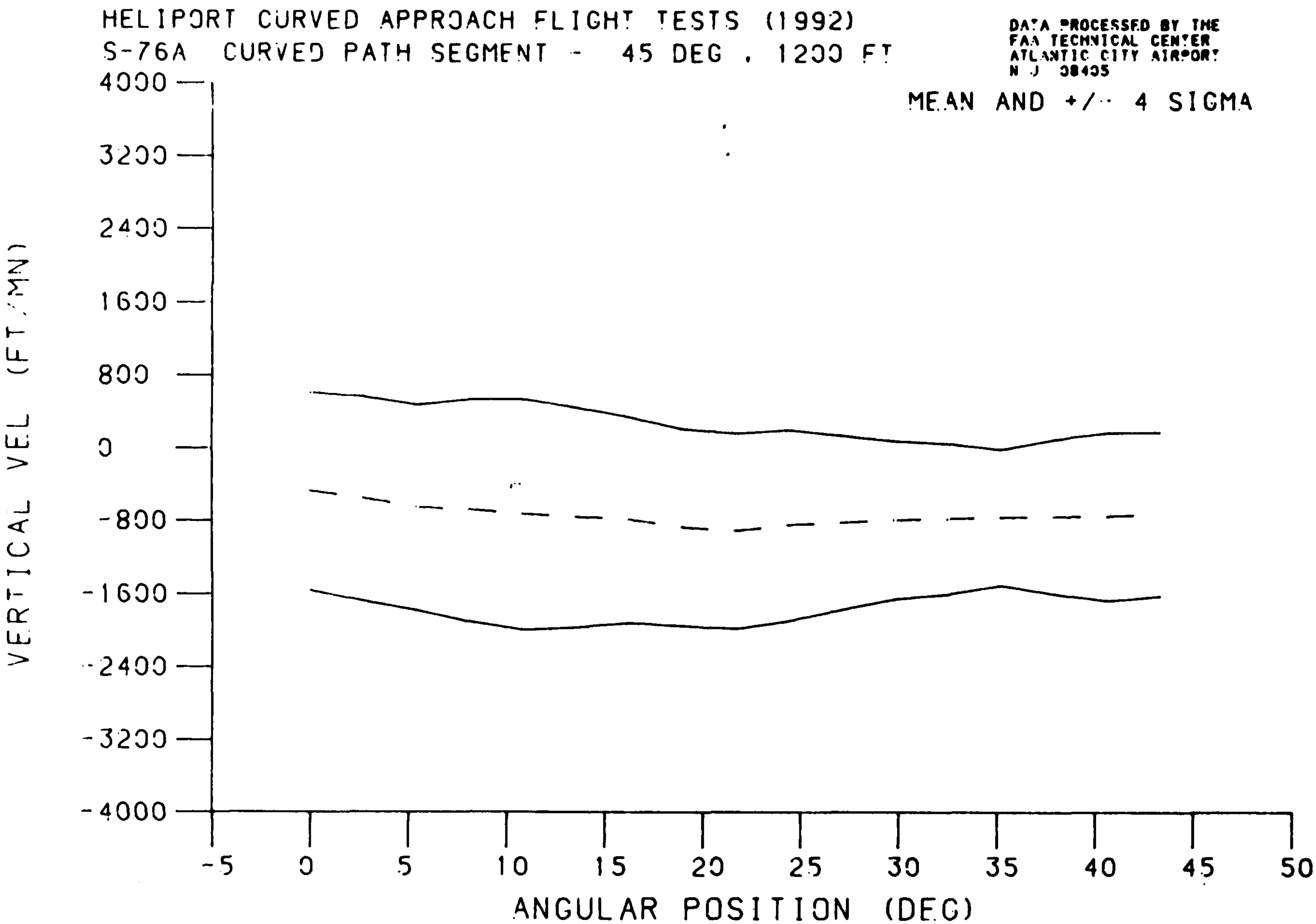

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG , 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
FLIGHT ALTITUDE (FT)
900
800
700
600
500
400
300
200
100
0
-10
10
30
50
70
90
110
130
150
170
190
210
ANGULAR POSITION (DEG)

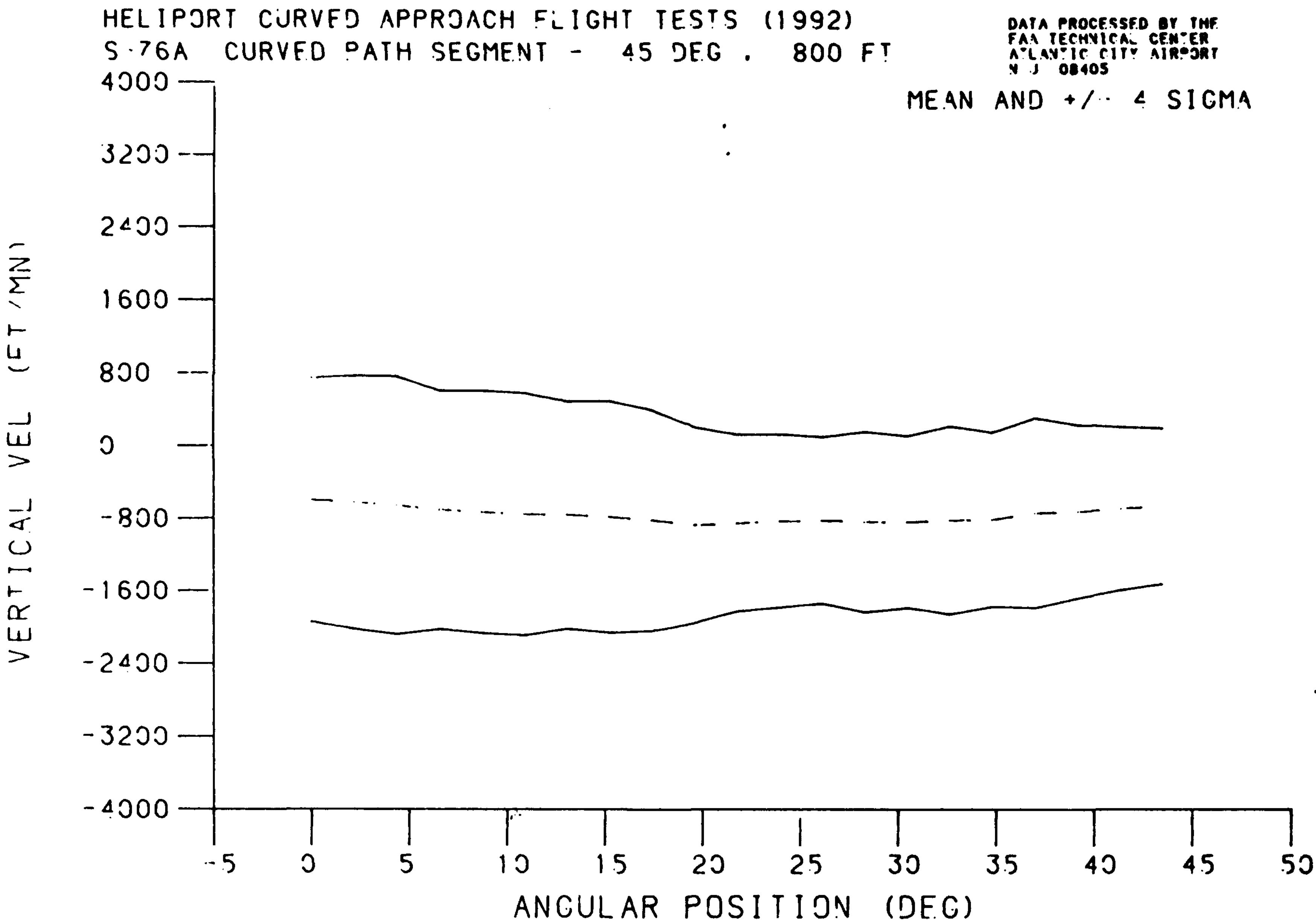

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG , 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
FLIGHT ALTITUDE (FT)
900
800
700
600
500
400
300
200
100
0
-10
10
30
50
70
90
110
130
150
170
190
210
ANGULAR POSITION (DE

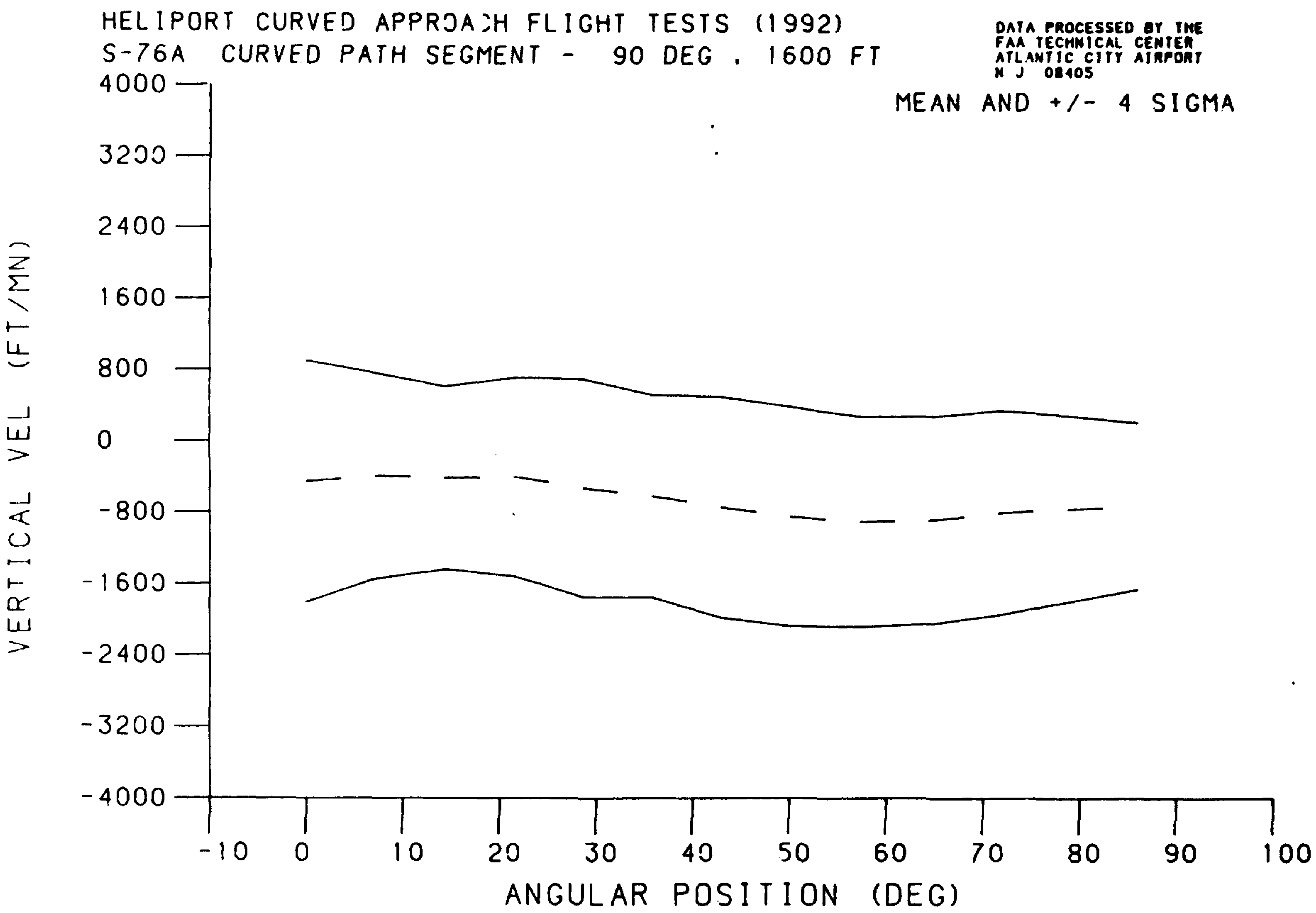

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
FLIGHT ALTITUDE (FT)
900
800
700
600
500
400
300
200
100
0
-10
10
30
50
70
90
110
130
150
170
190
210
ANGULAR POSITION (DEG)

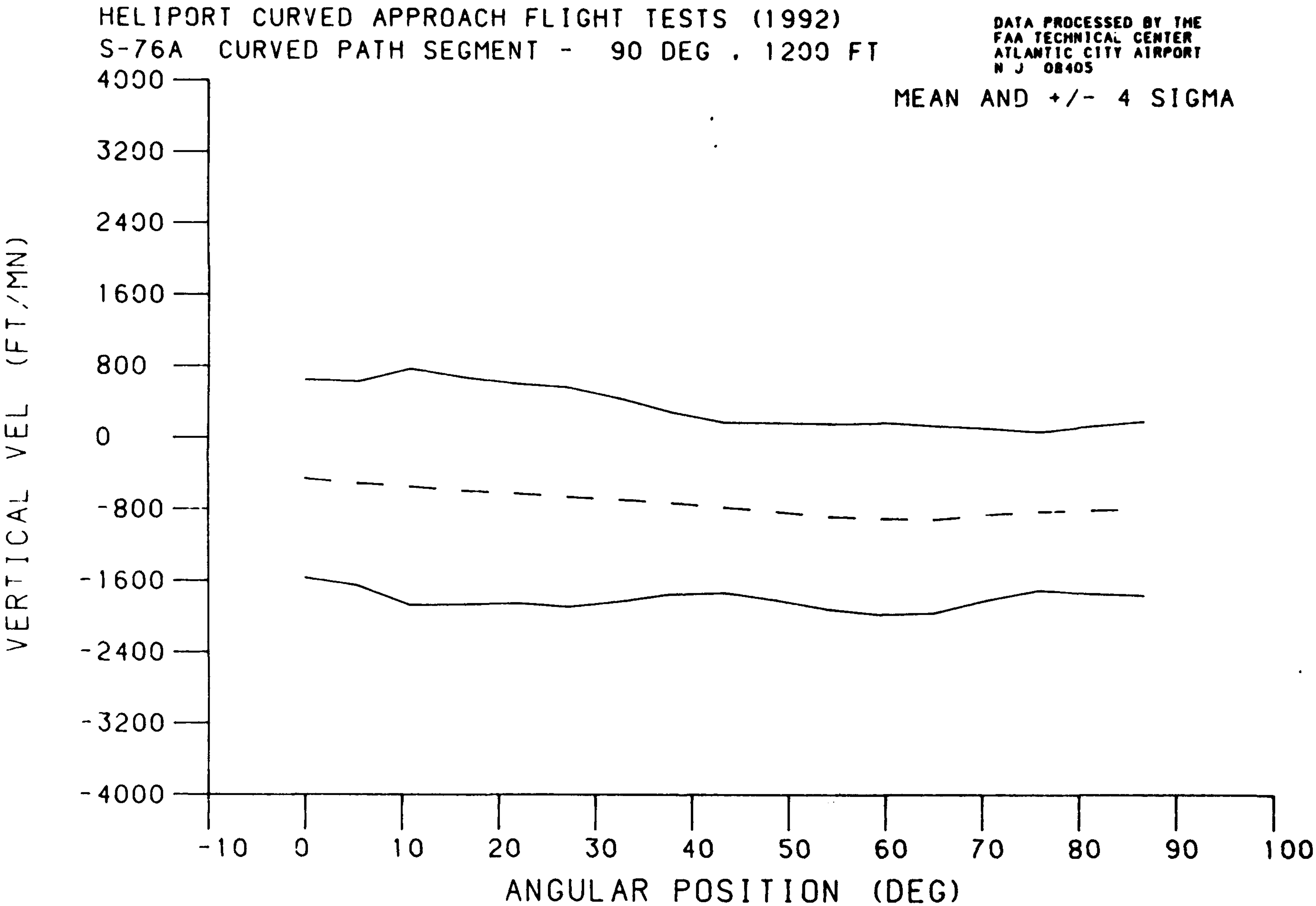
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG . 1600 FT

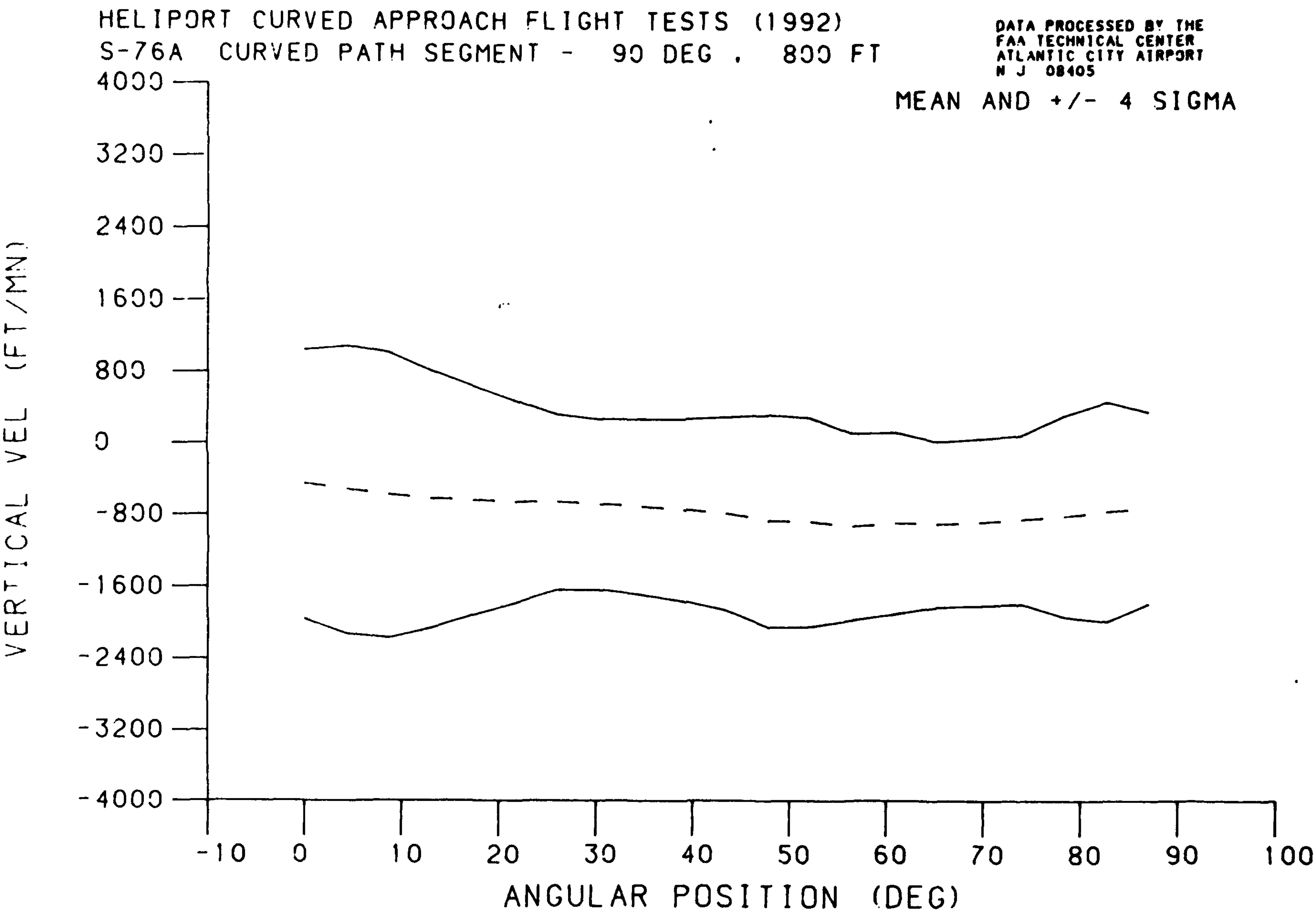


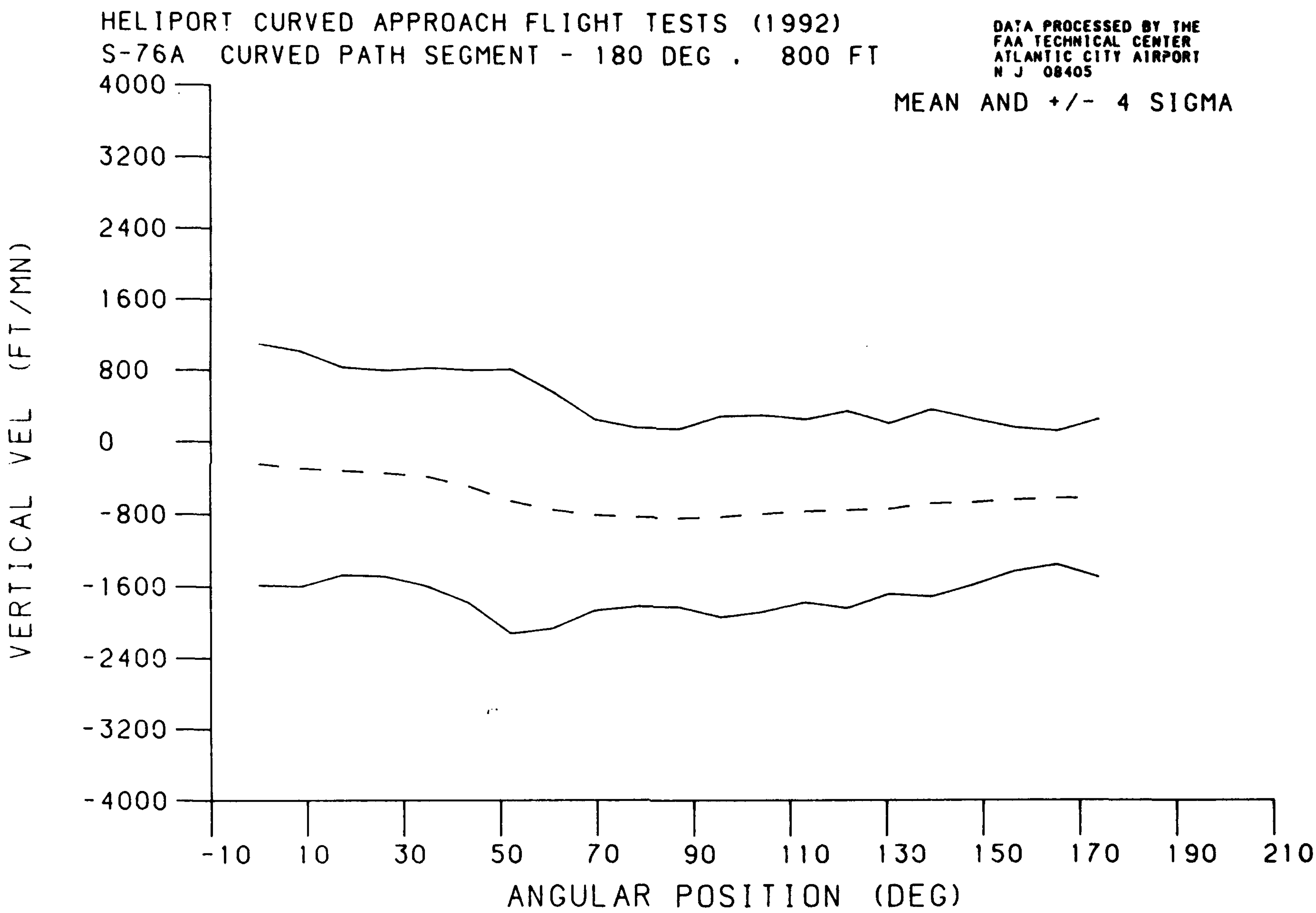

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG , 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
VERTICAL VEL (FT/MN)
4000
3200
2400
1600
800
0
-800
-1600
-2400
-3200
-4000
-5
0
5
10
15
20
25
30
35
40
45
50
ANGULAR POSITION (DEG)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG . 800 FT
DATA PROCESSED BY THE FAA TECHNICAL CENTER ATLANTIC CITY AIRPORT N J 08405
MEAN AND +/- 4 SIGMA
VERTICAL VEL (FT/MN)
4000
3200
2400
1600
800
0
-800
-1600
-2400
-3200
-4000
-5
0
5
10
15
20
25
30
35
40
45
50
ANGULAR POSITION (DEG)

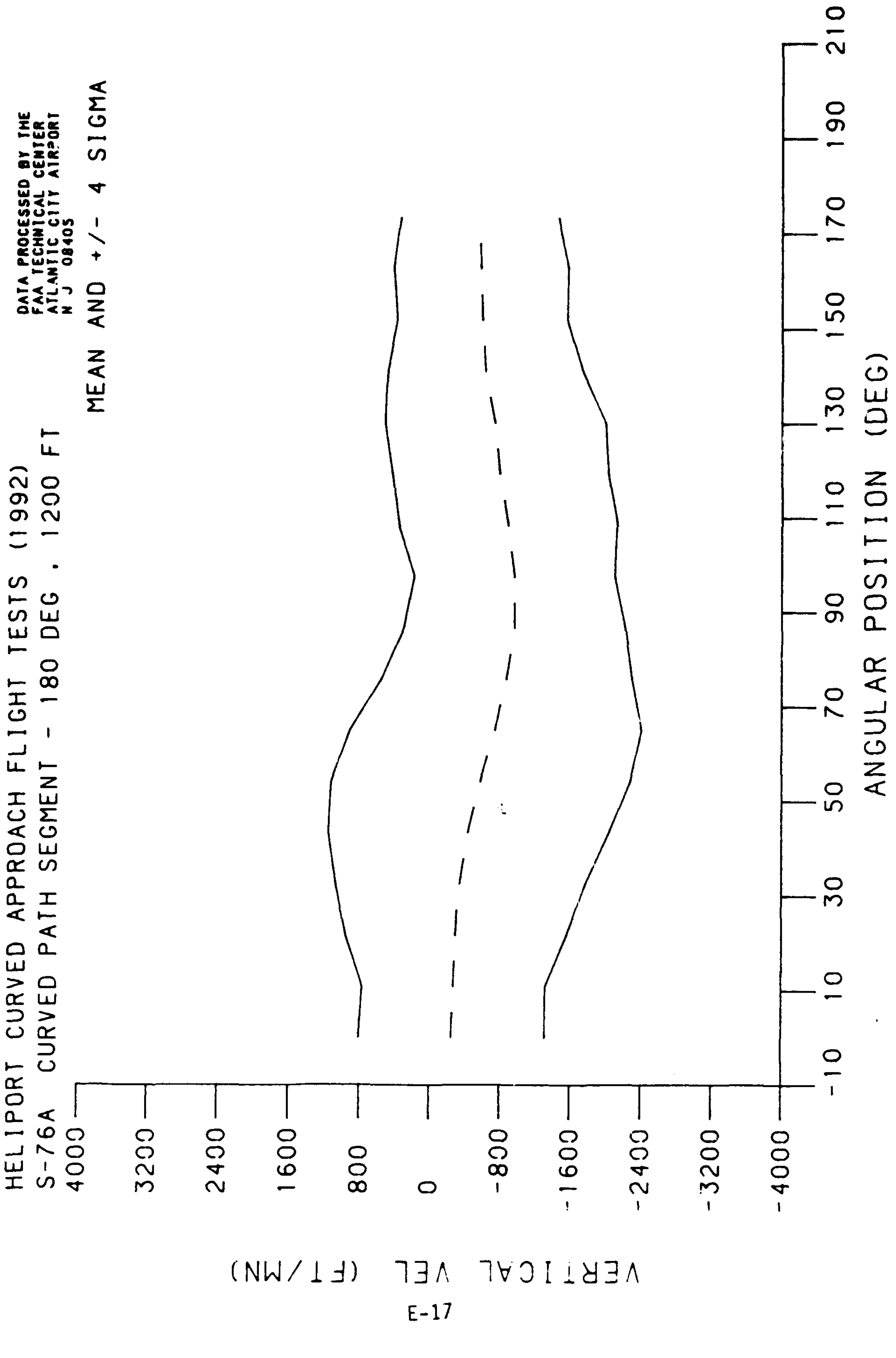

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG , 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
4000
3200
2400
1600
800
0
-800
-1600
-2400
-3200
-4000
VERTICAL VEL (FT/MN)
-10
0
10
20
30
40
50
60
70
80
90
100
ANGULAR POSITION (DEG)

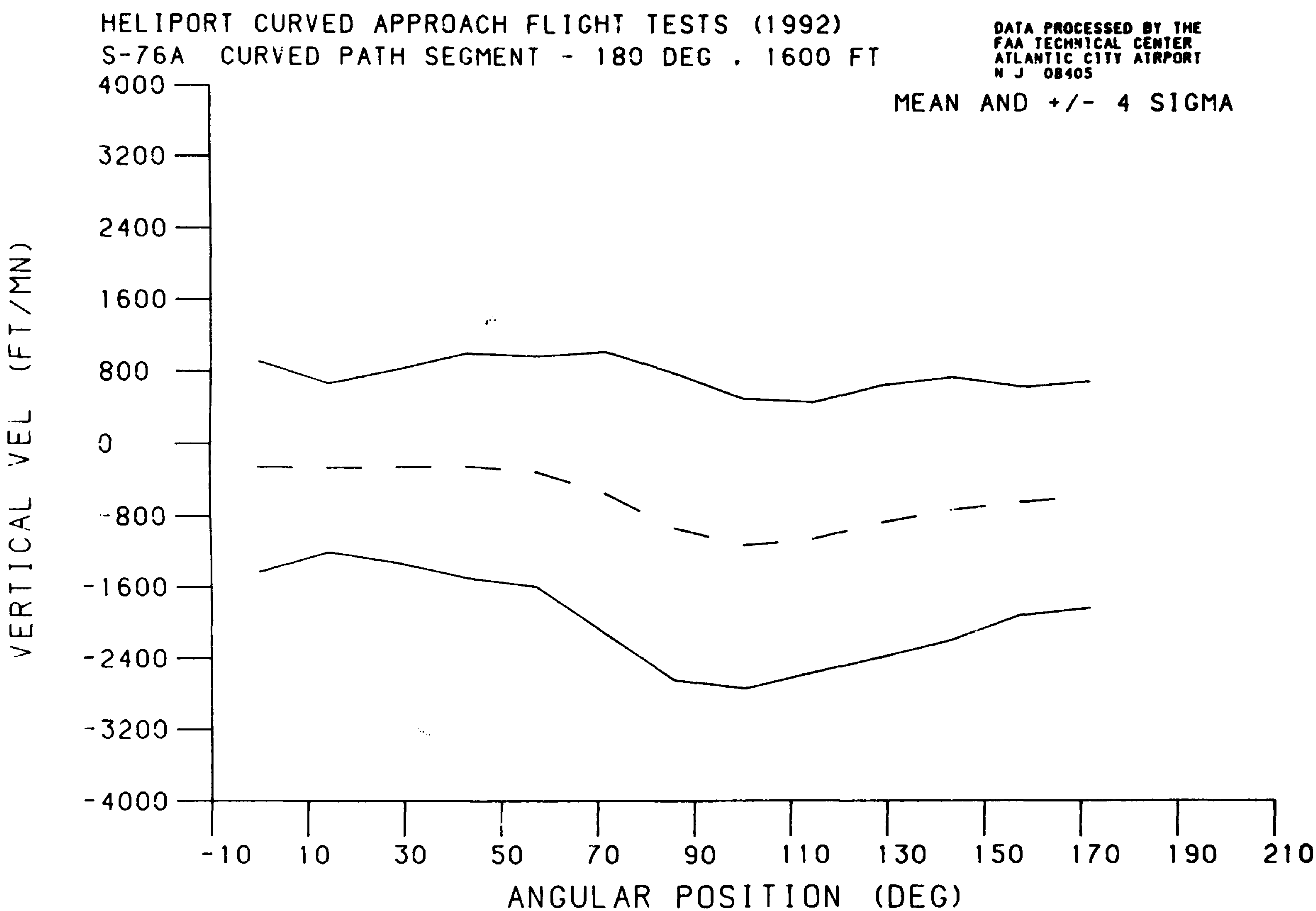

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG , 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
4000
3200
2400
1600
800
0
-800
-1600
-2400
-3200
-4000
VERTICAL VEL (FT/MN)
-10
0
10
20
30
40
50
60
70
80
90
100
ANGULAR POSITION (DEG)

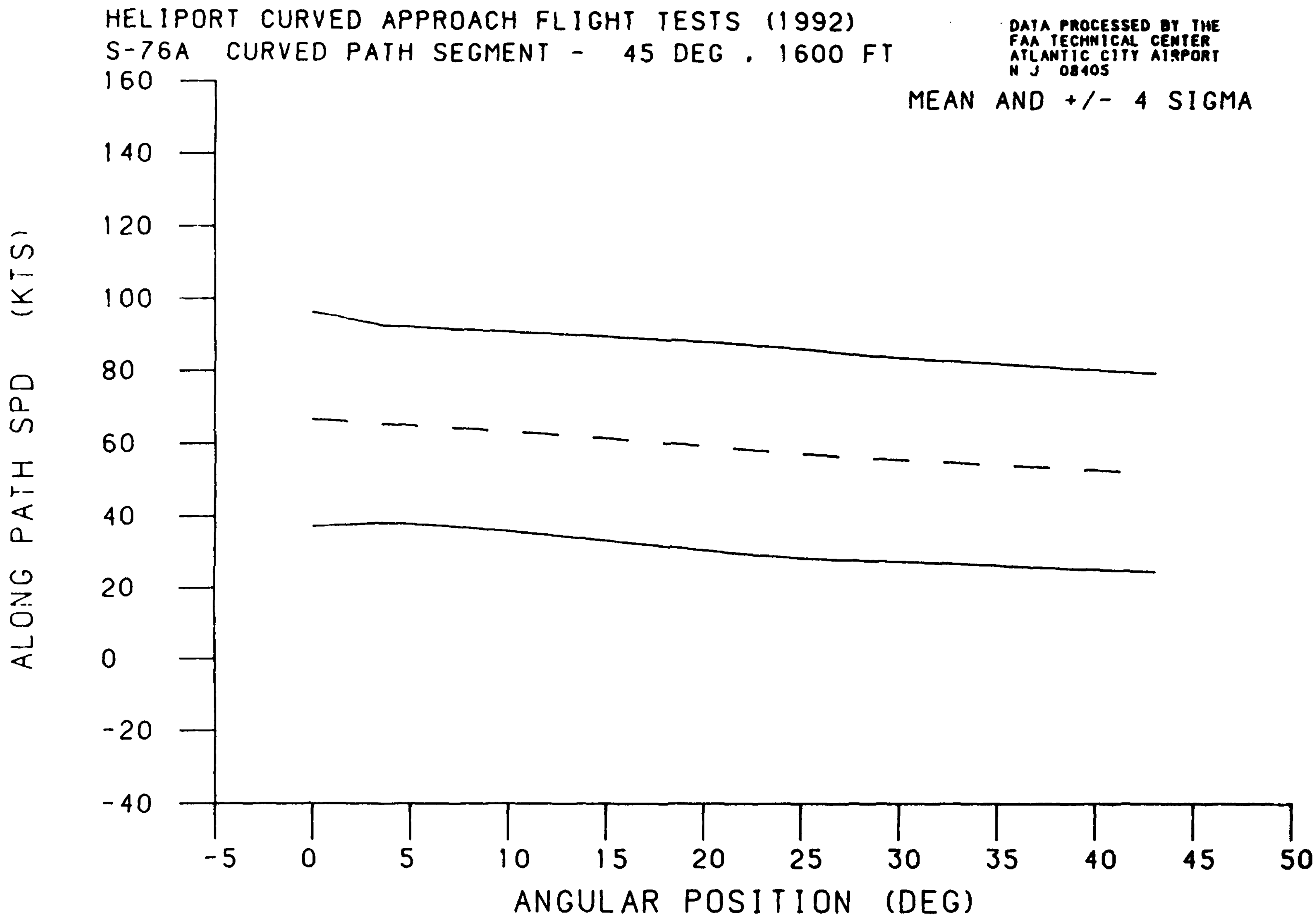

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
VERTICAL VEL (FT/MN)
4000
3200
2400
1600
800
0
-800
-1600
-2400
-3200
-4000
-10
0
10
20
30
40
50
60
70
80
90
100
ANGULAR POSITION (DEG)

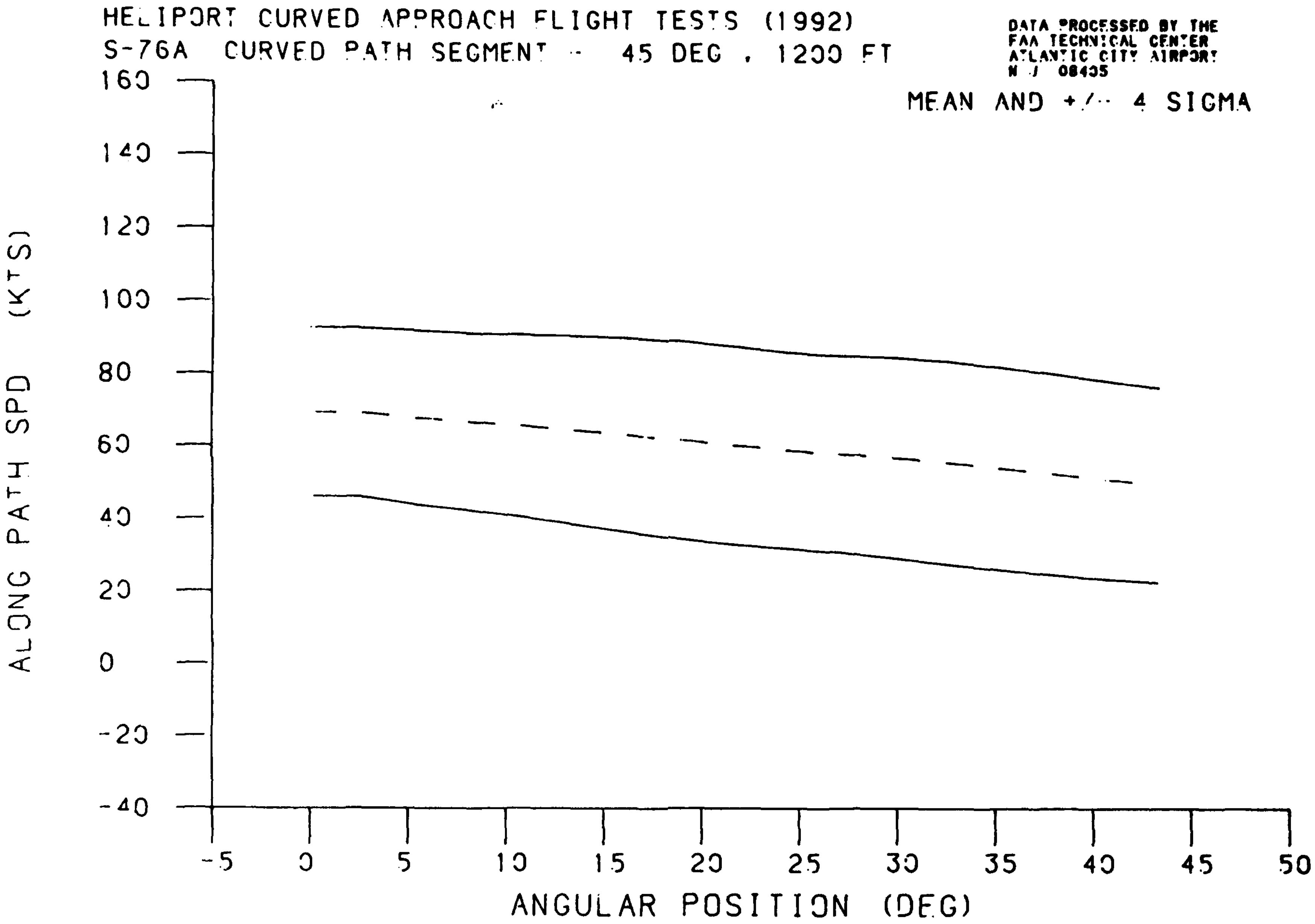


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG . 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
VERTICAL VEL (FT/MN)
4000
3200
2400
1600
800
0
-800
-1600
-2400
-3200
-4000
-10
10
30
50
70
90
110
130
150
170
190
210
ANGULAR POSITION (DEG)

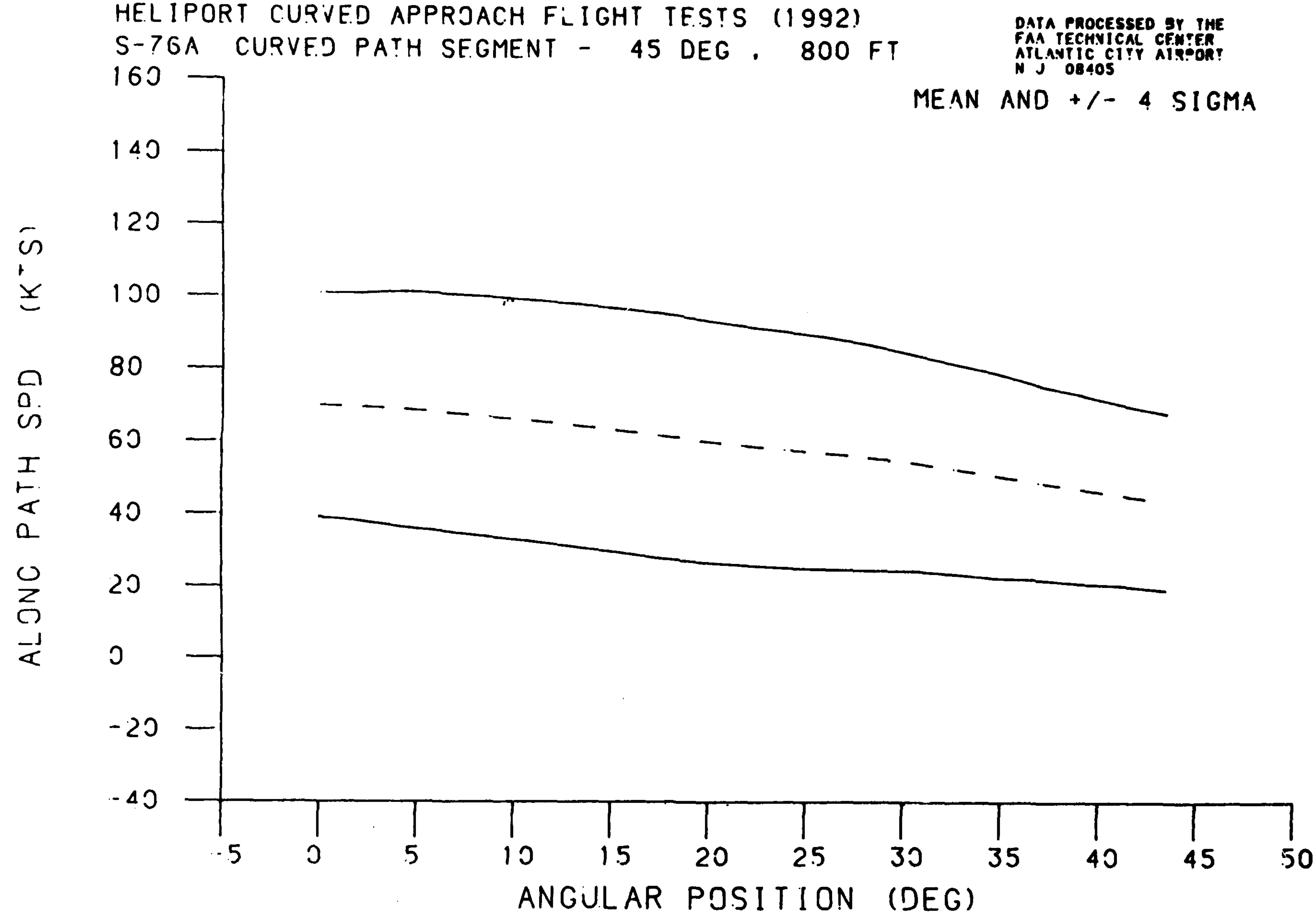

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG . 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
4000
3200
2400
1600
800
0
-800
-1600
-2400
-3200
-4000
VERTICAL VEL (FT/MN)
-10
10
30
50
70
90
110
130
150
170
190
210
ANGULAR POSITION (DEG)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG . 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
VERTICAL VEL (FT/MN)
4000
3200
2400
1600
800
0
-800
-1600
-2400
-3200
-4000
-10
10
30
50
70
90
110
130
150
170
190
210
ANGULAR POSITION (DEG)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG , 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
160
140
120
100
80
60
40
20
0
-20
-40
ALONG PATH SPD (KTS)
-5
0
5
10
15
20
25
30
35
40
45
50
ANGULAR POSITION (DEG)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG , 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
160
140
120
100
80
60
40
20
0
-20
-40
ALONG PATH SPD (KTS)
-5
0
5
10
15
20
25
30
35
40
45
50
ANGULAR POSITION (DEG)

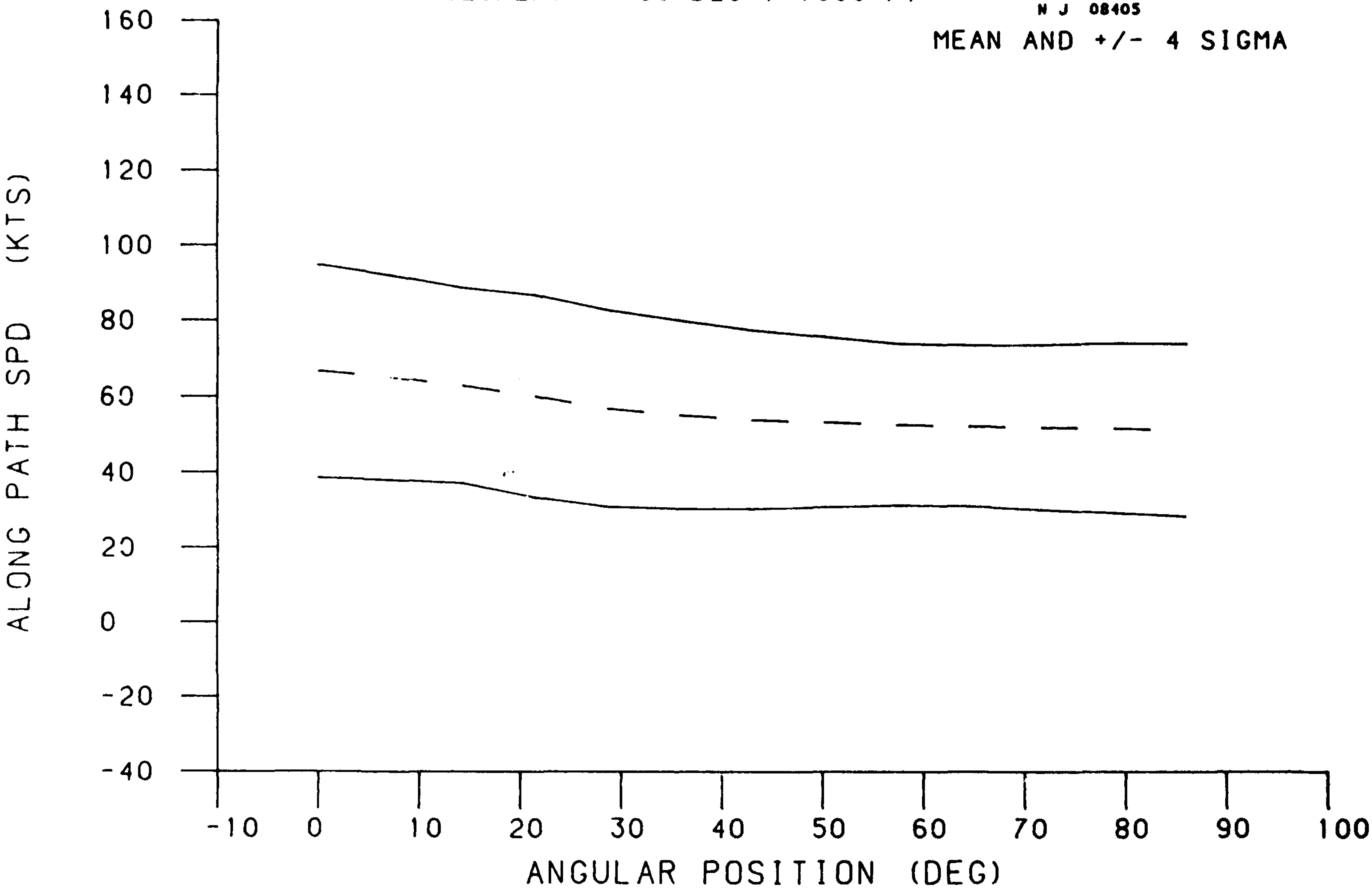
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG , 800 FT



HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG , 1600 FT

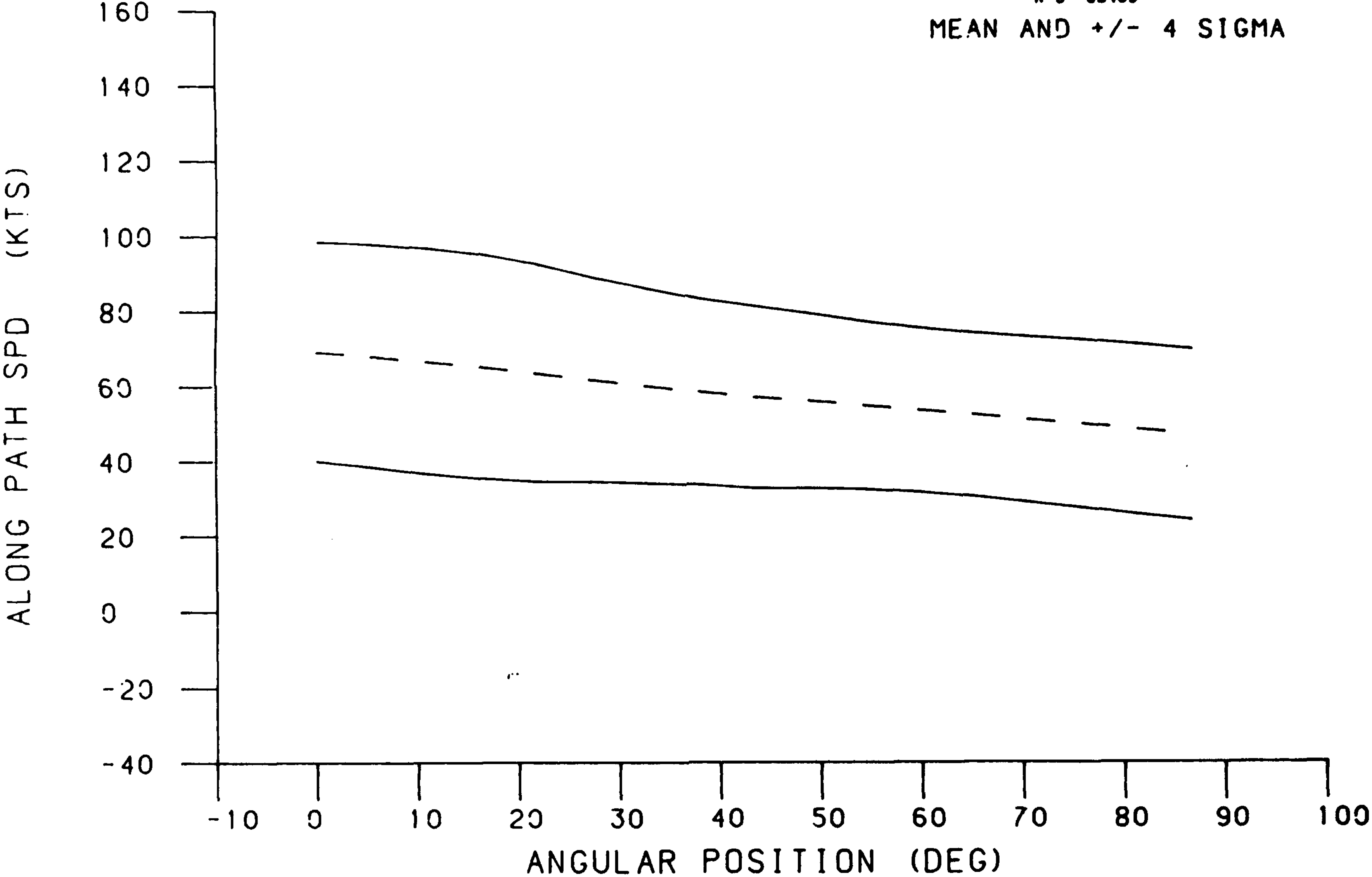
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405

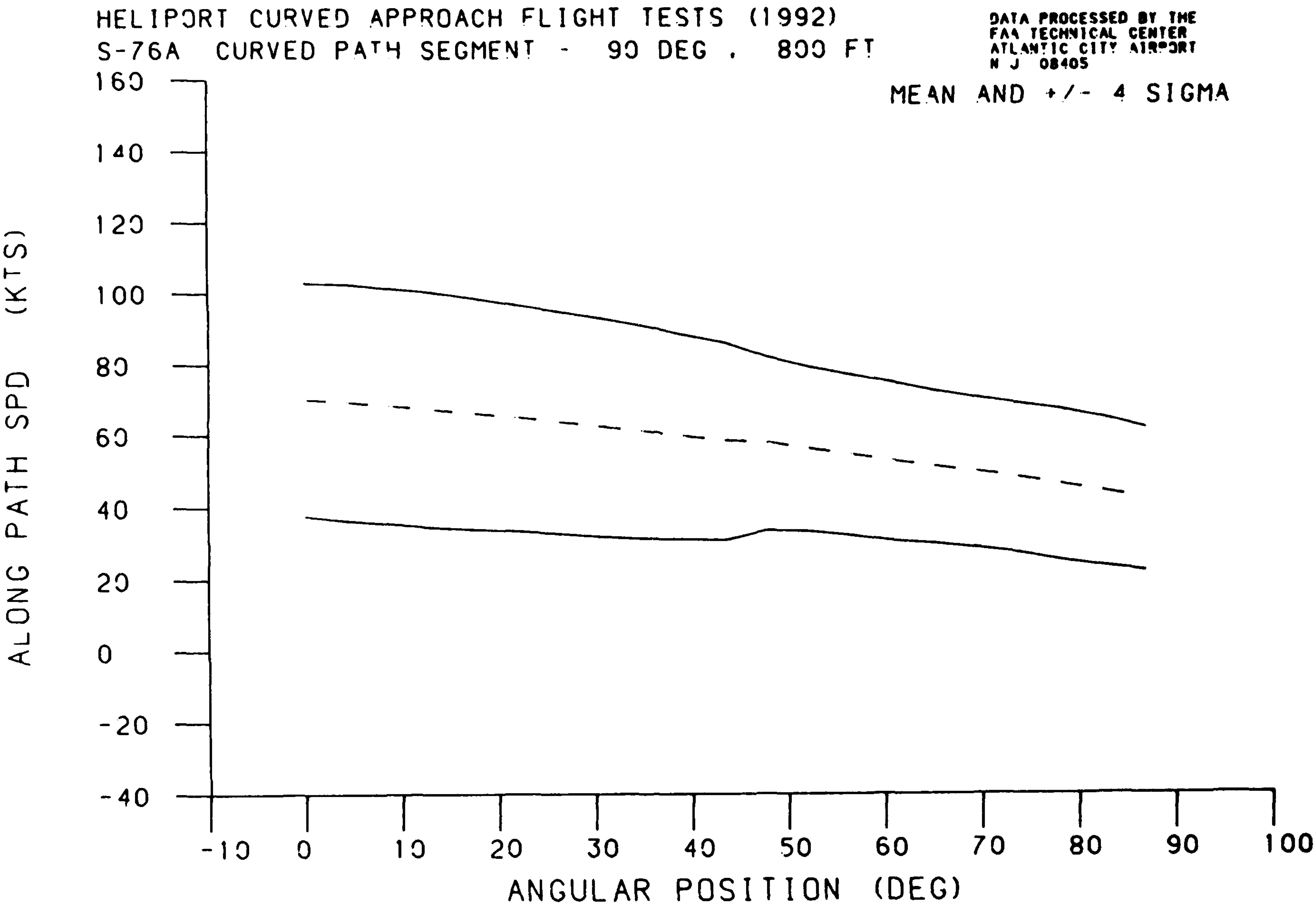
MEAN AND +/- 4 SIGMA



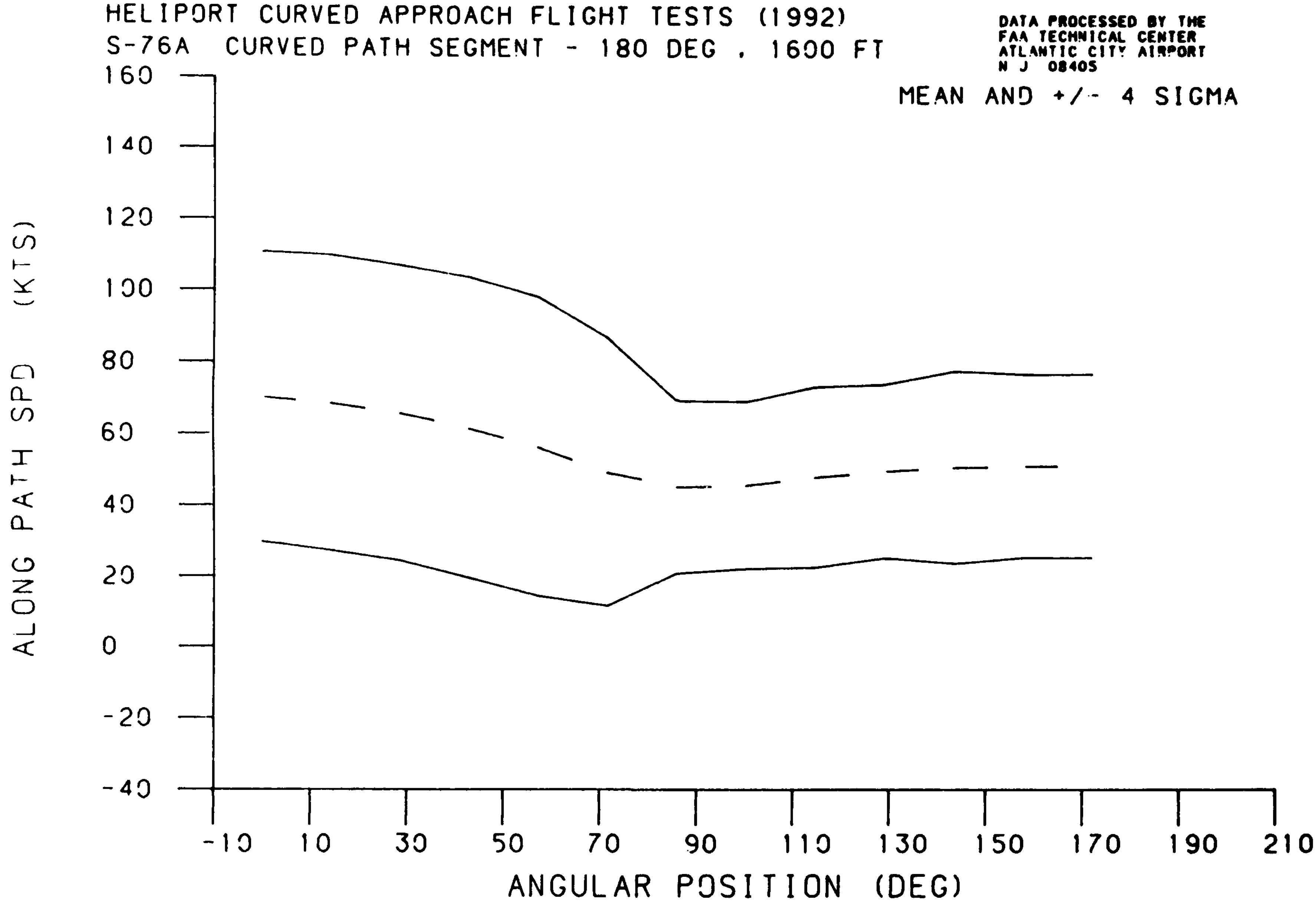
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG , 1200 FT

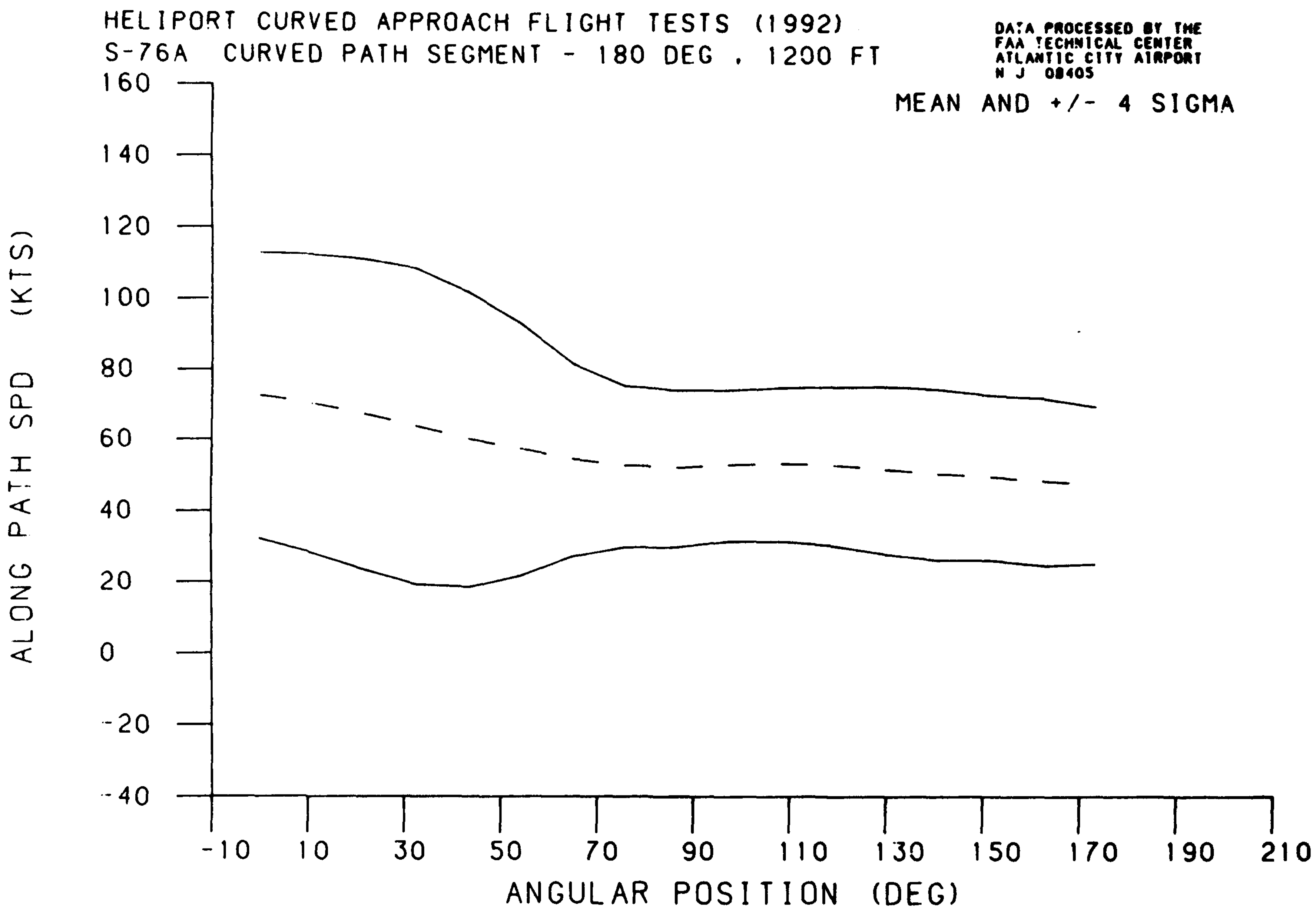
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405

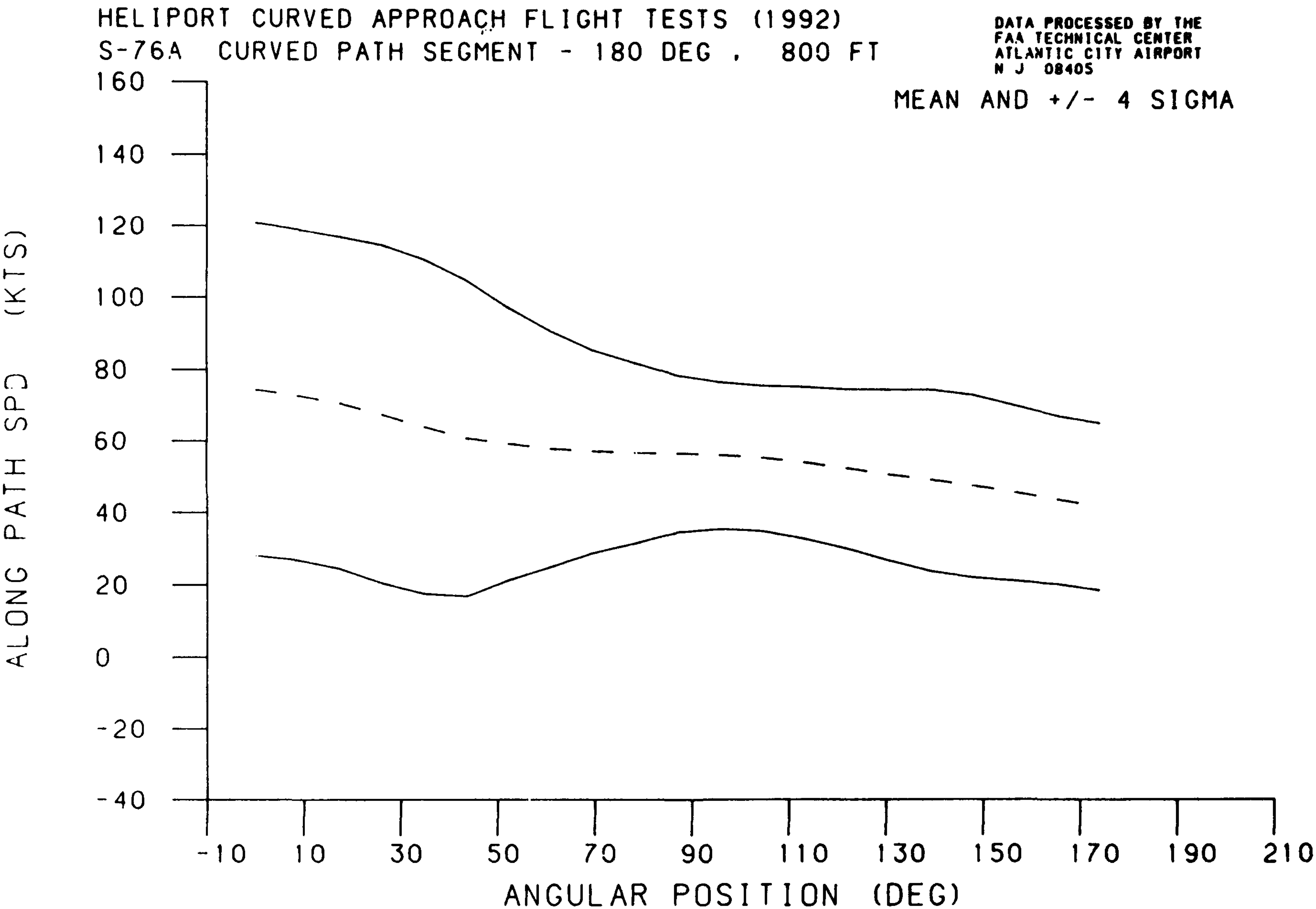



HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG , 800 FT
DATA PROCESSED BY THE FAA TECHNICAL CENTER ATLANTIC CITY AIRPORT N J 08405
MEAN AND +/- 4 SIGMA
ALONG PATH SPD (KTS)
160
140
120
100
80
60
40
20
0
-20
-40
-10
0
10
20
30
40
50
60
70
80
90
100
ANGULAR POSITION (DEG)

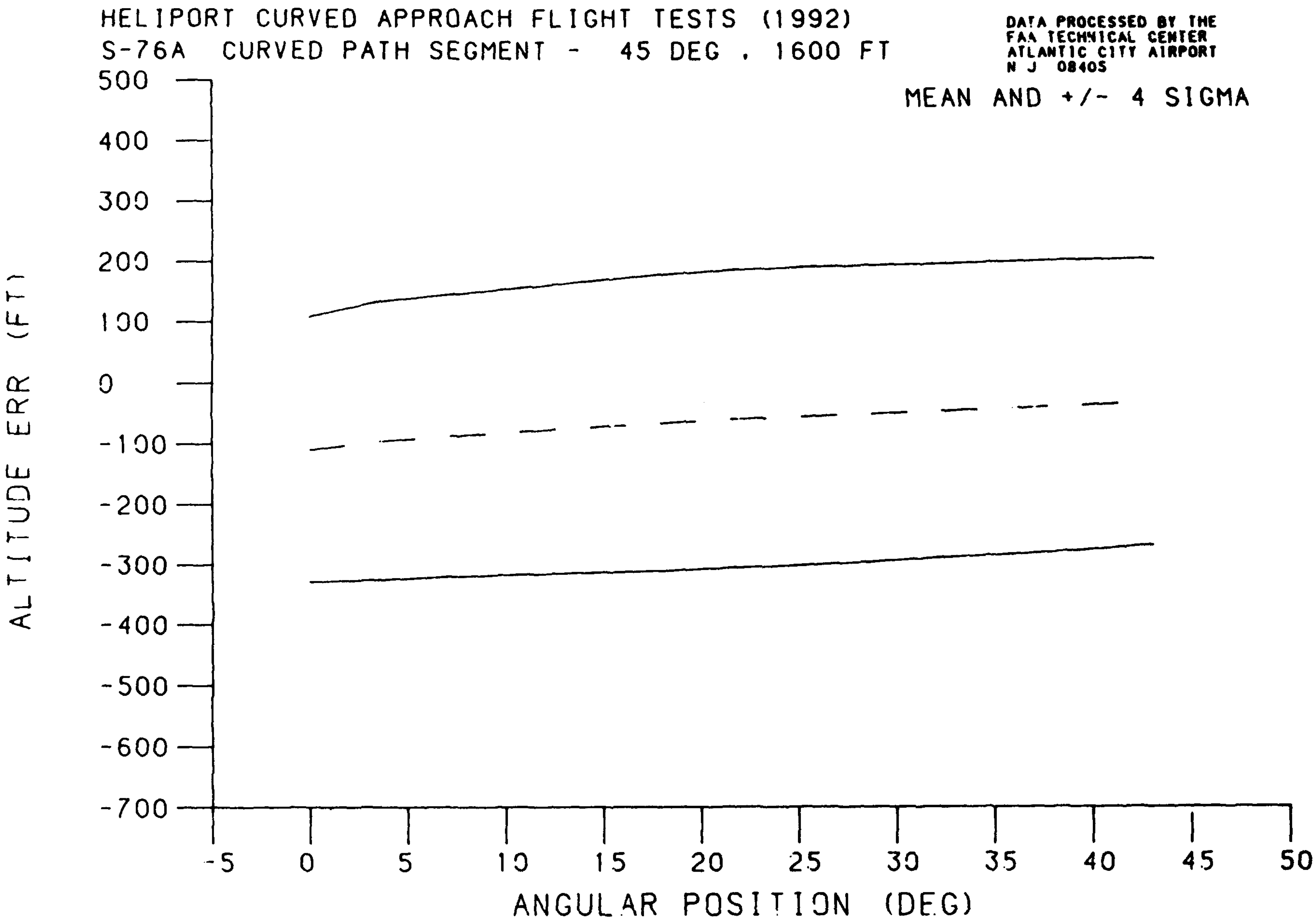
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG , 1600 FT

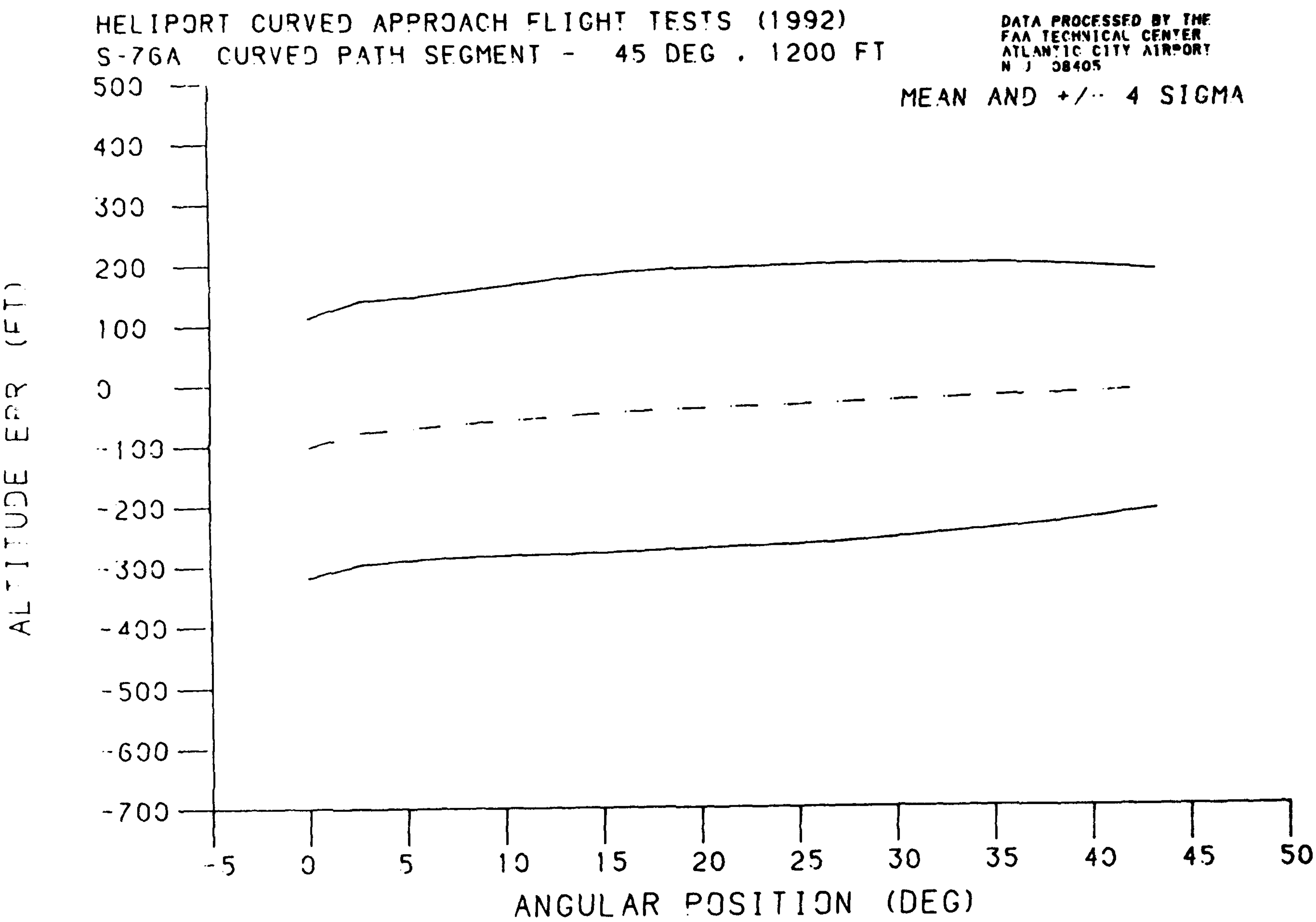


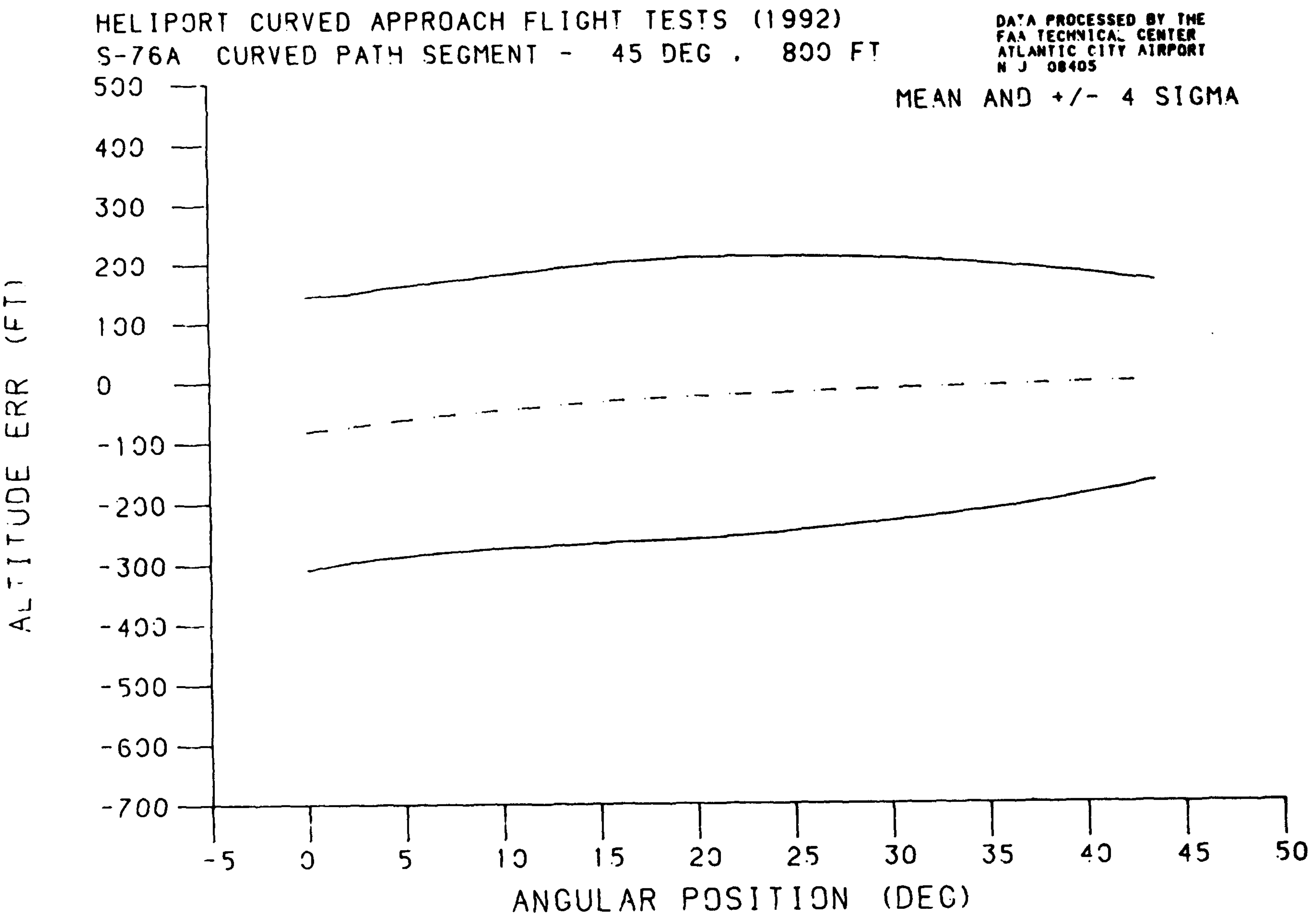

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG , 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
ALONG PATH SPD (KTS)
160
140
120
100
80
60
40
20
0
-20
-40
-10
10
30
50
70
90
110
130
150
170
190
210
ANGULAR POSITION (DEG)



HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
ALONG PATH SPD (KTS)
160
140
120
100
80
60
40
20
0
-20
-40
-10
10
30
50
70
90
110
130
150
170
190
210
ANGULAR POSITION (DEG)

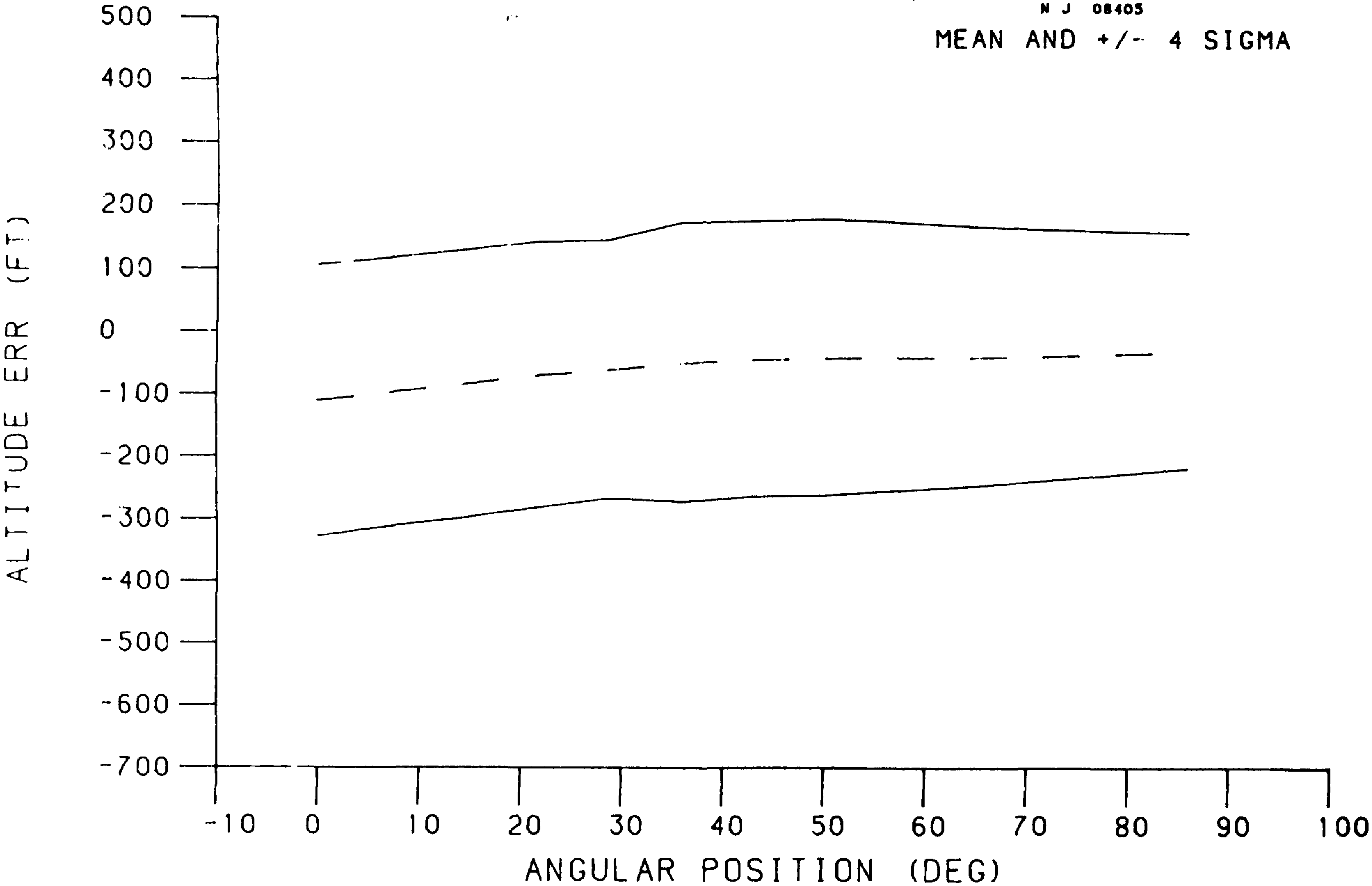

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG , 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
500
400
300
200
100
0
-100
-200
-300
-400
-500
-600
-700
ALTITUDE ERR (FT)
-5
0
5
10
15
20
25
30
35
40
45
50
ANGULAR POSITION (DEG)

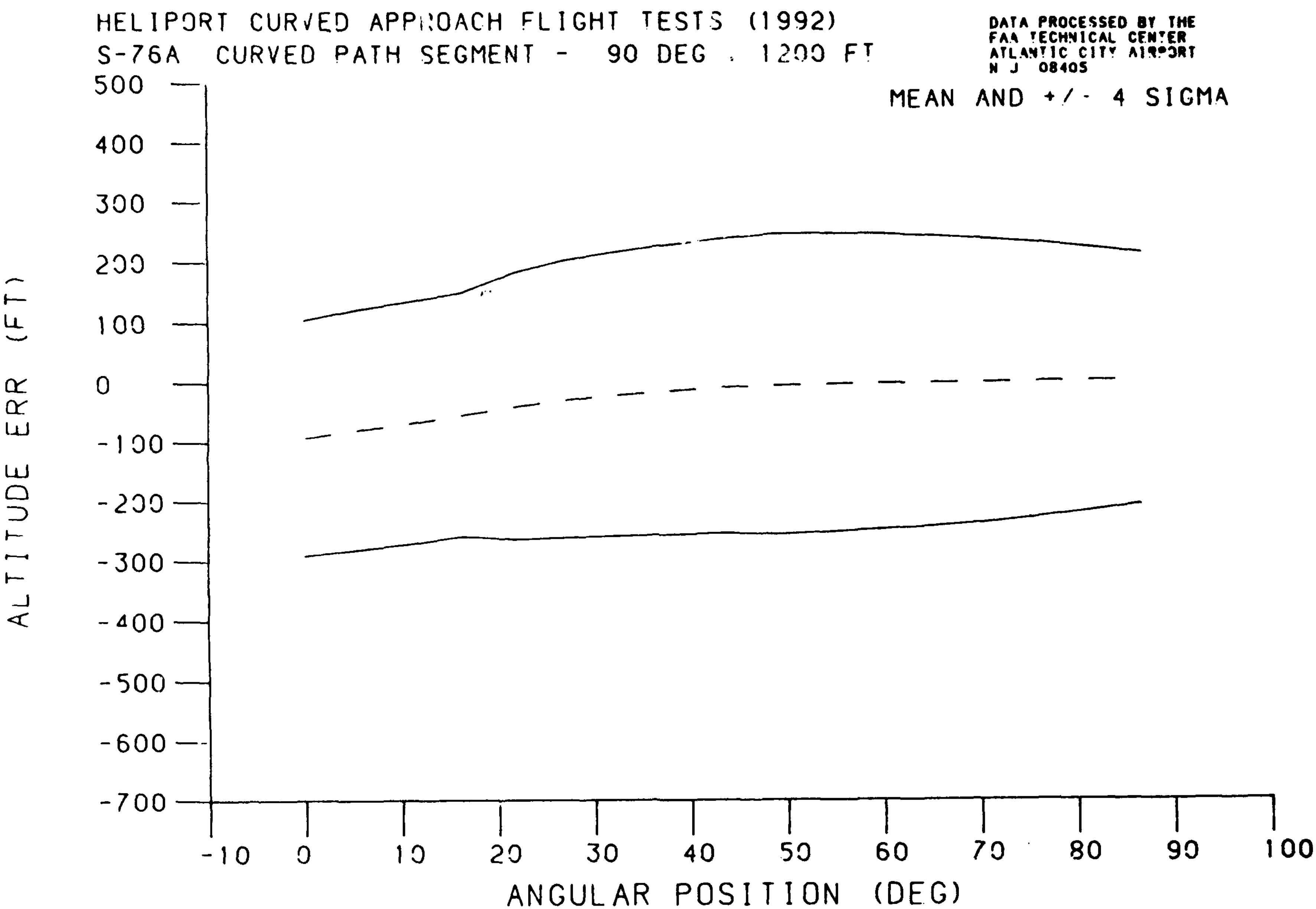

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG , 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
ALTITUDE ERR (FT)
500
400
300
200
100
0
-100
-200
-300
-400
-500
-600
-700
-5
0
5
10
15
20
25
30
35
40
45
50
ANGULAR POSITION (DEG)

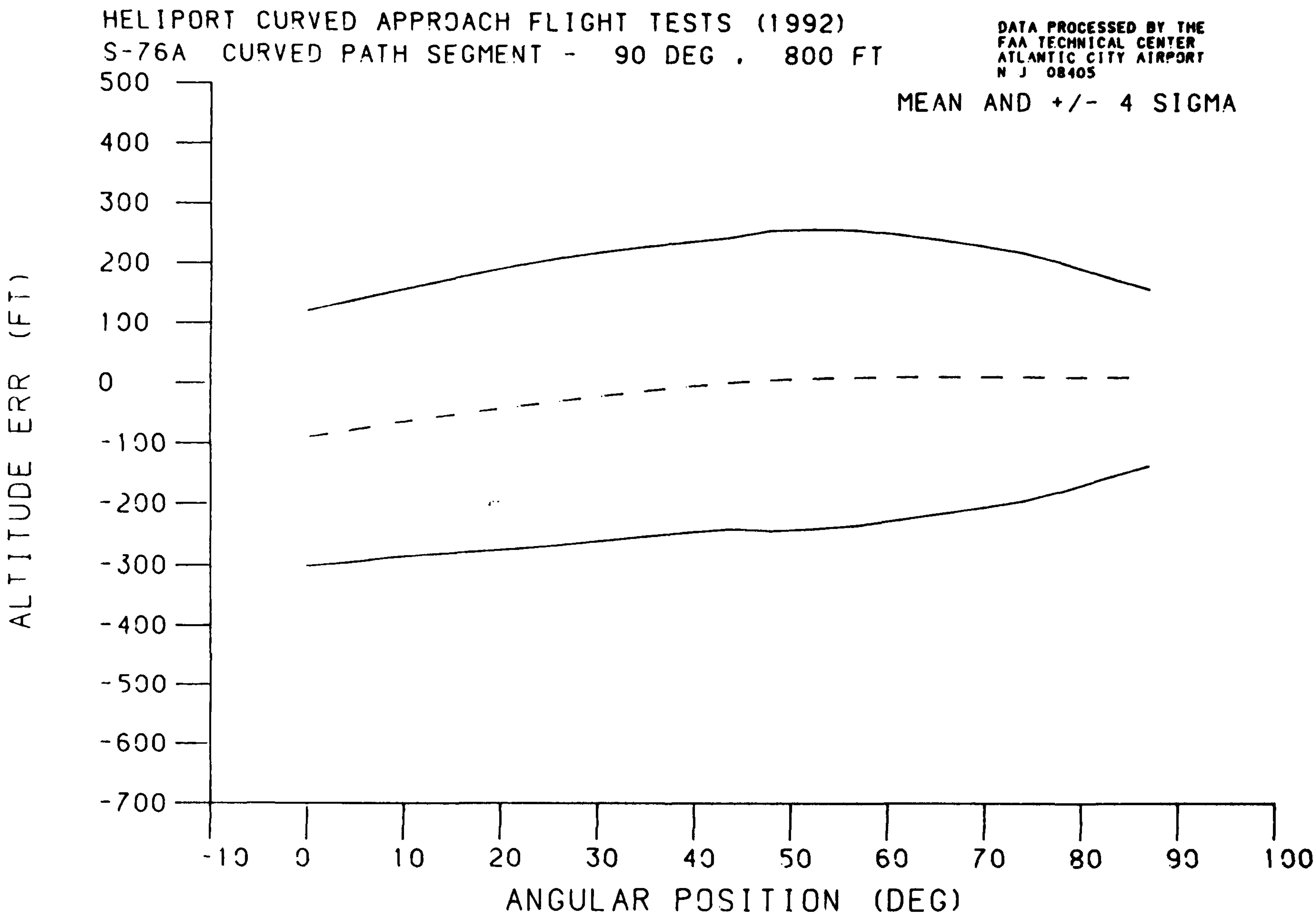

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
ALTITUDE ERR (FT)
500
400
300
200
100
0
-100
-200
-300
-400
-500
-600
-700
-5
0
5
10
15
20
25
30
35
40
45
50
ANGULAR POSITION (DEG)

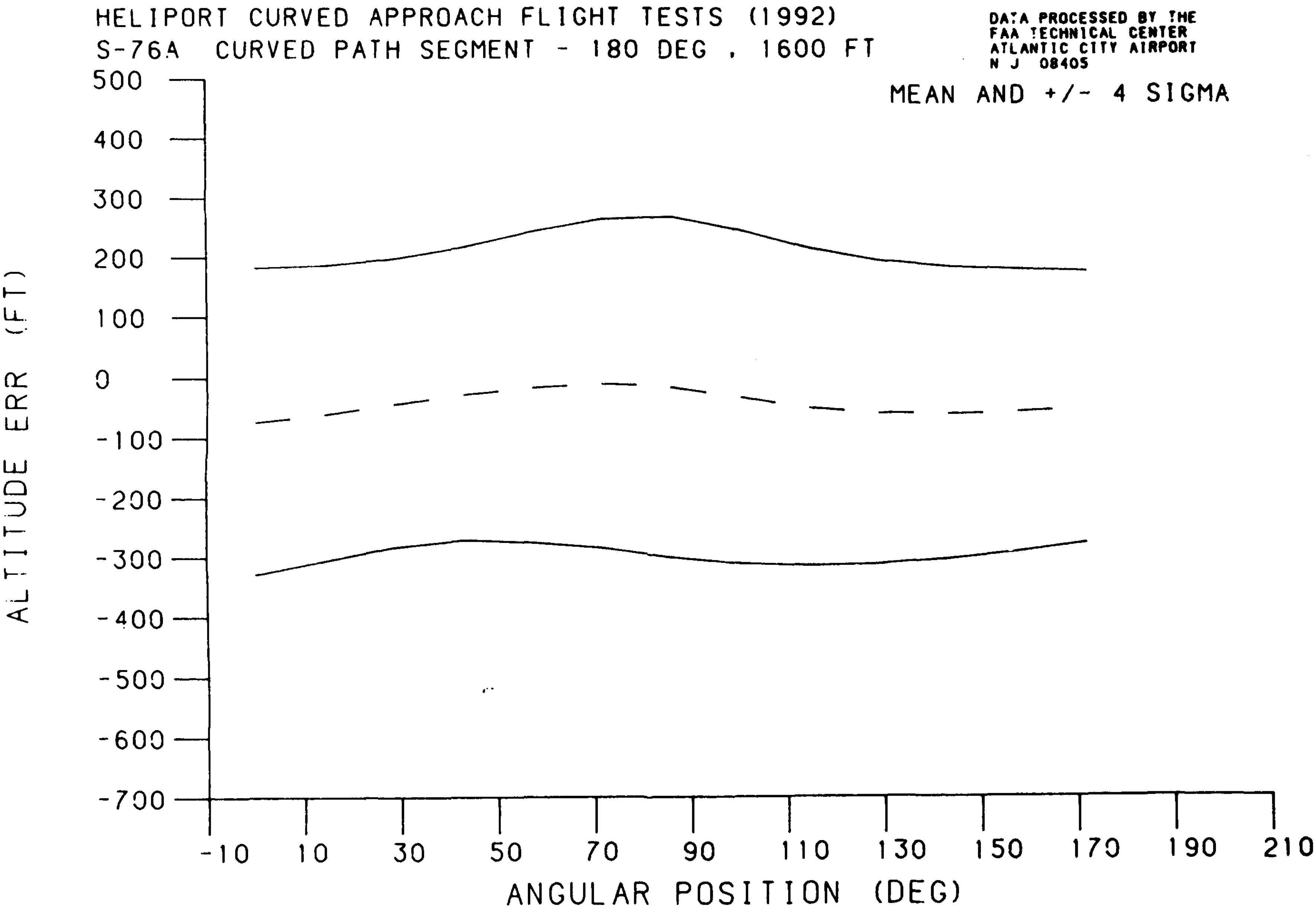
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG , 1600 FT

DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405




HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG , 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
ALTITUDE ERR (FT)
500
400
300
200
100
0
-100
-200
-300
-400
-500
-600
-700
-10
0
10
20
30
40
50
60
70
80
90
100
ANGULAR POSITION (DEG)

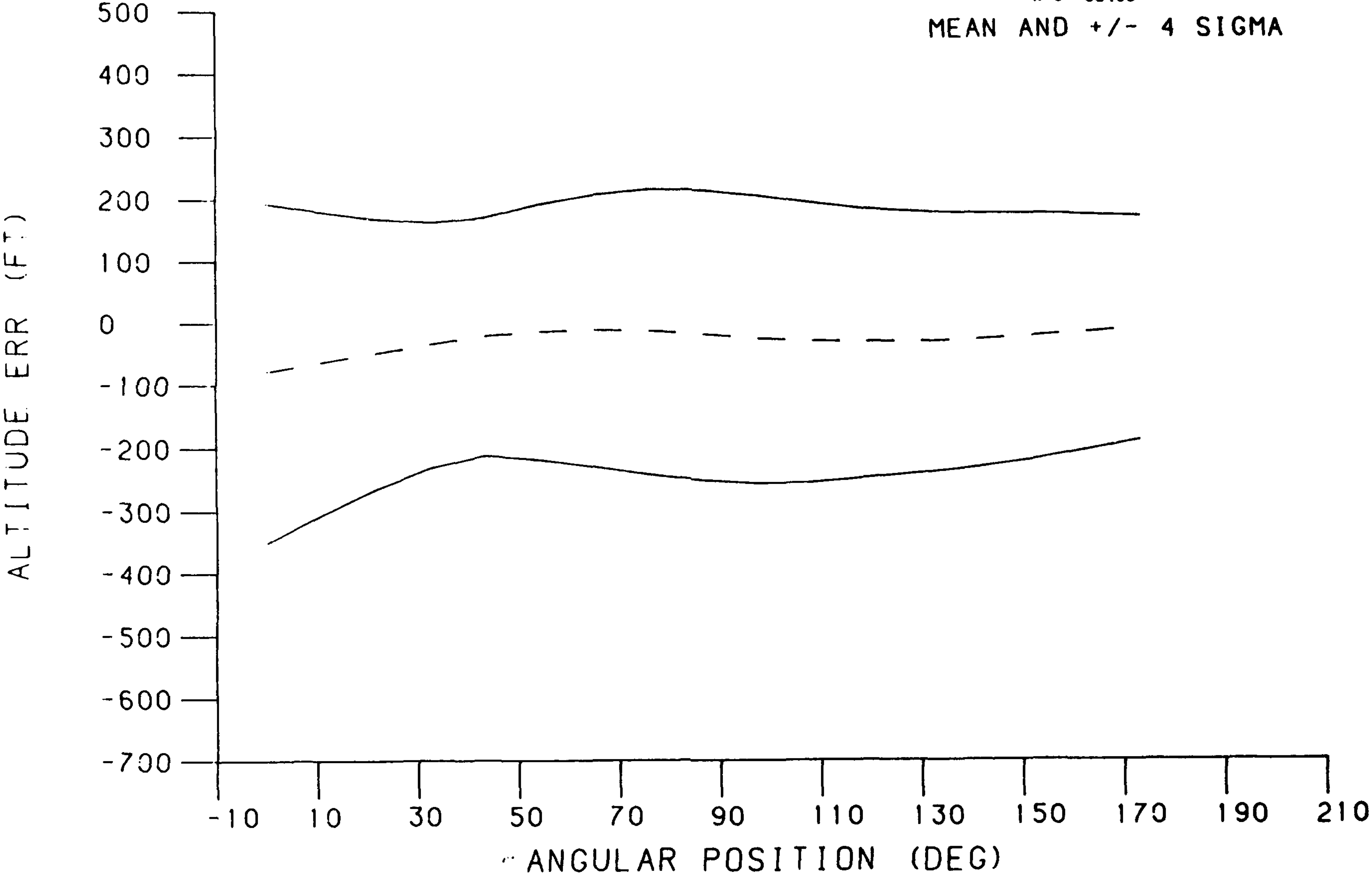

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
ALTITUDE ERR (FT)
500
400
300
200
100
0
-100
-200
-300
-400
-500
-600
-700
-10
0
10
20
30
40
50
60
70
80
90
100
ANGULAR POSITION (DEG)

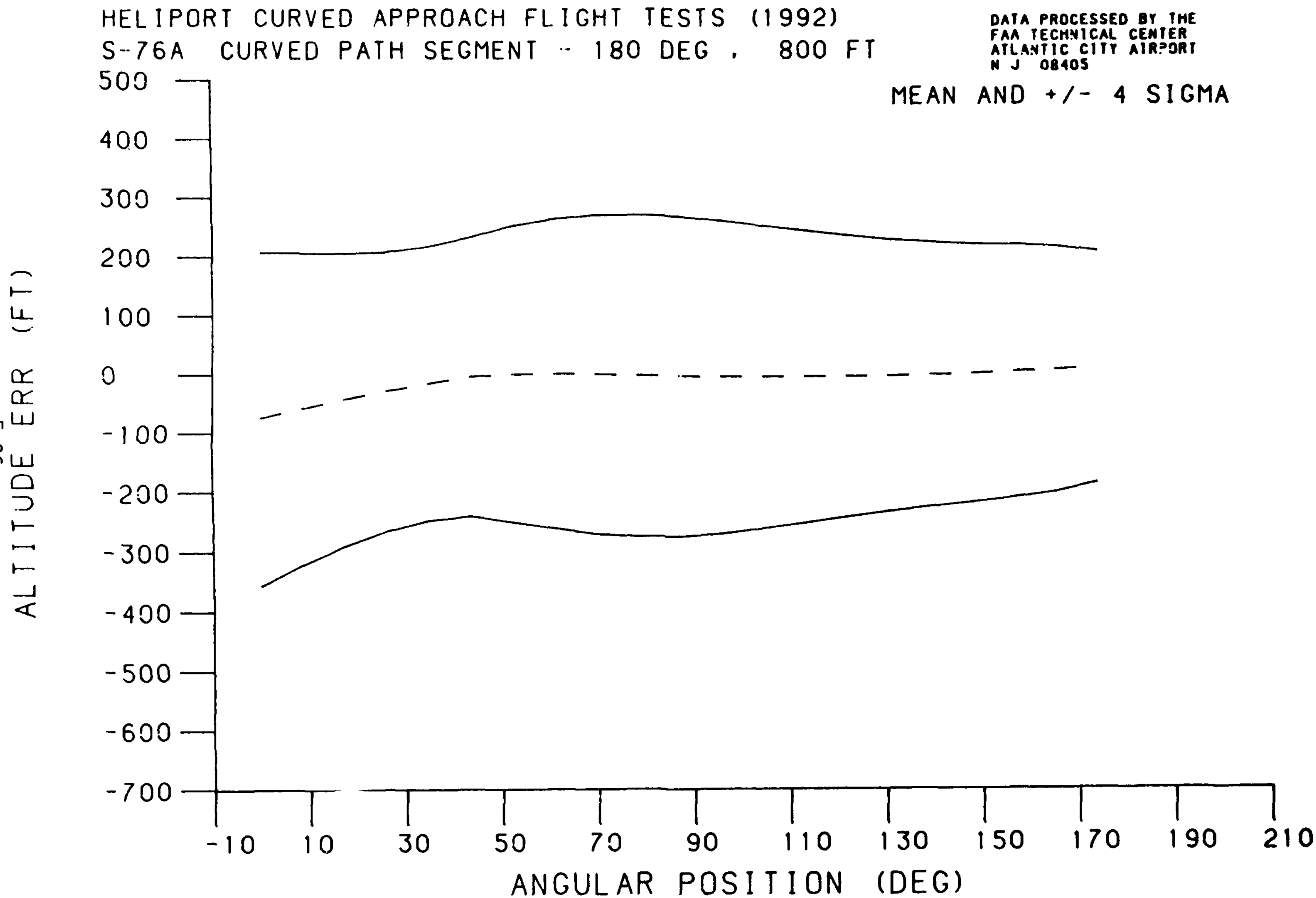


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG , 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
ALTITUDE ERR (FT)
500
400
300
200
100
0
-100
-200
-300
-400
-500
-600
-700
-10
10
30
50
70
90
110
130
150
170
190
210
ANGULAR POSITION (DEG)

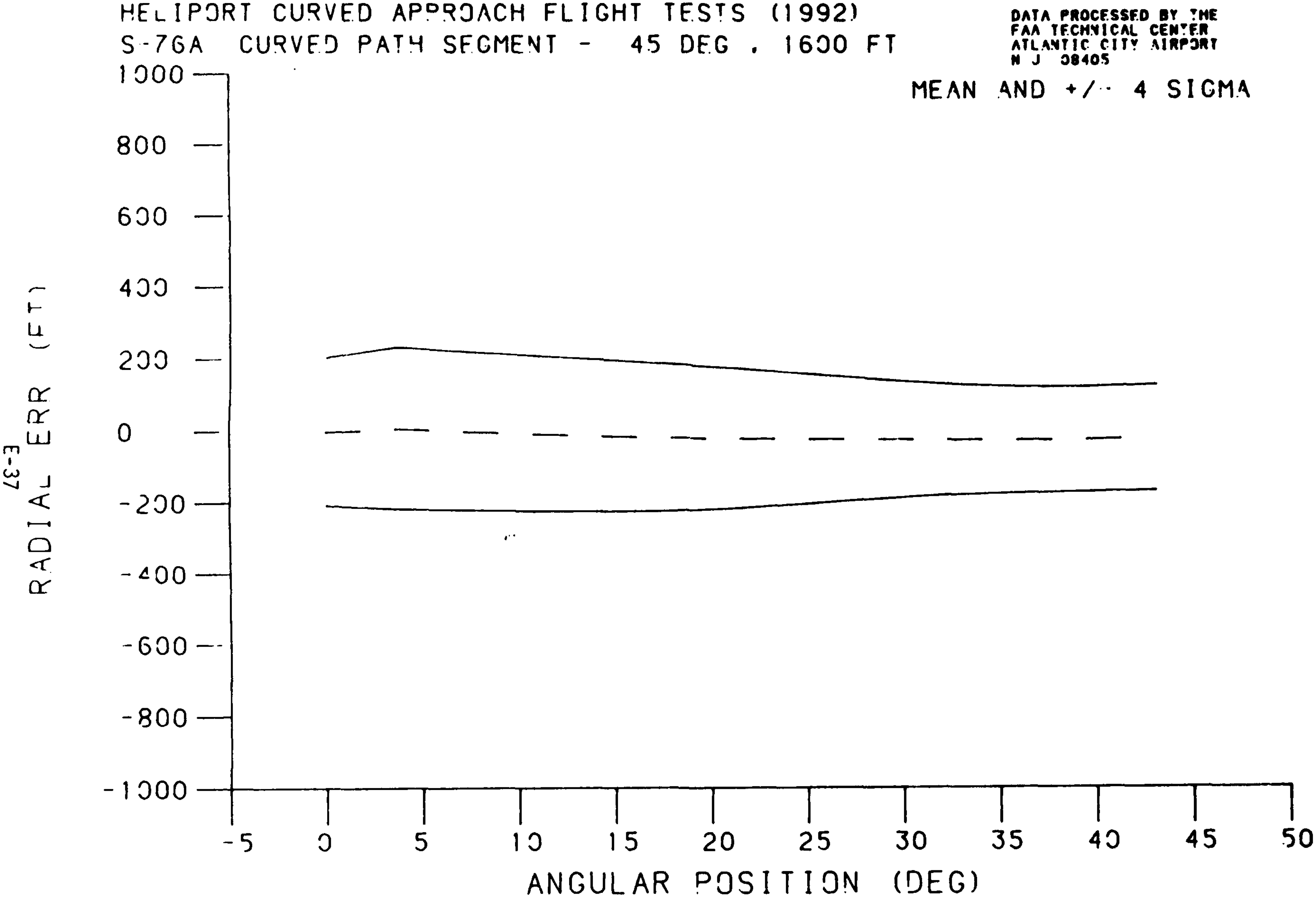
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG , 1200 FT

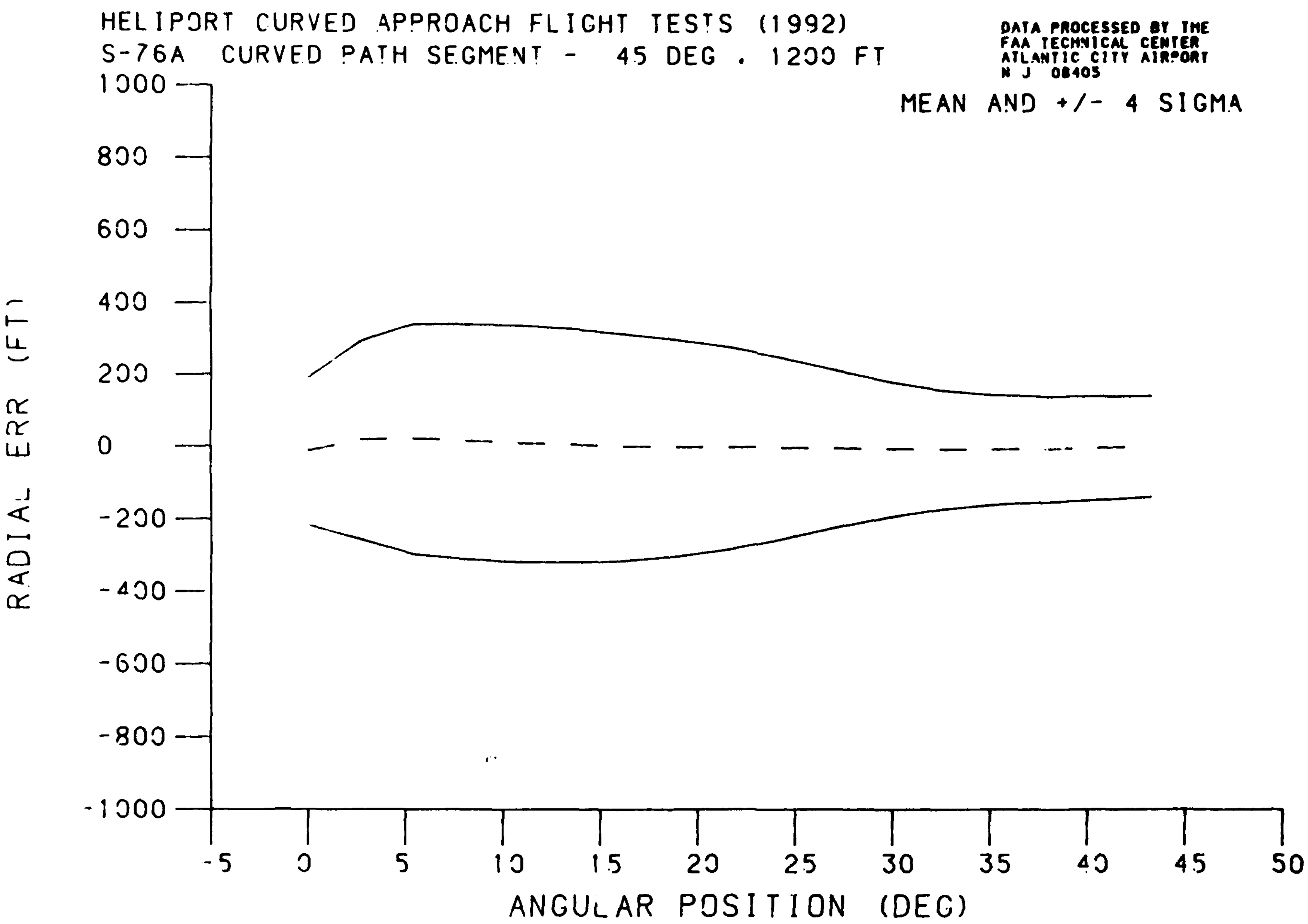
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405

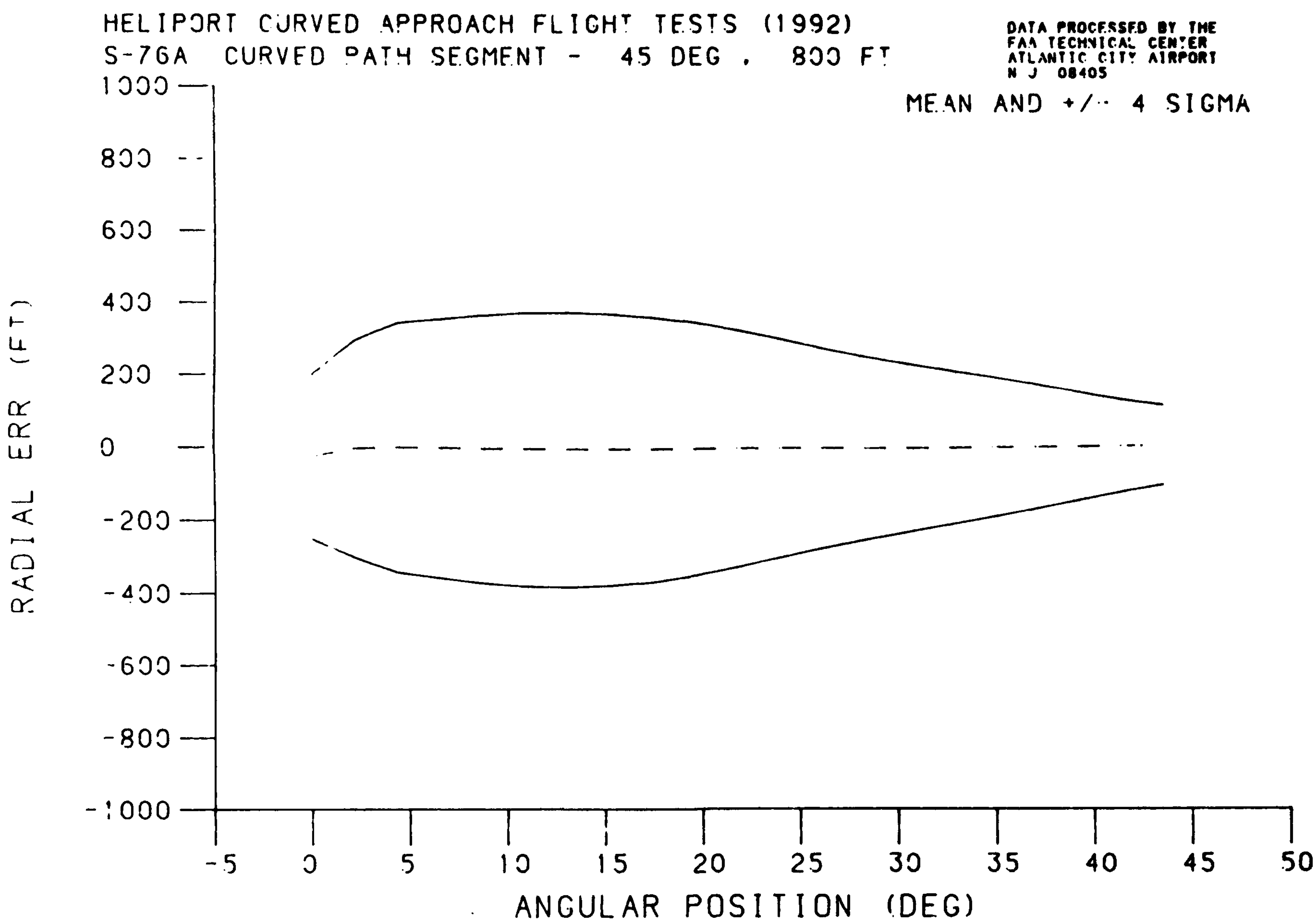


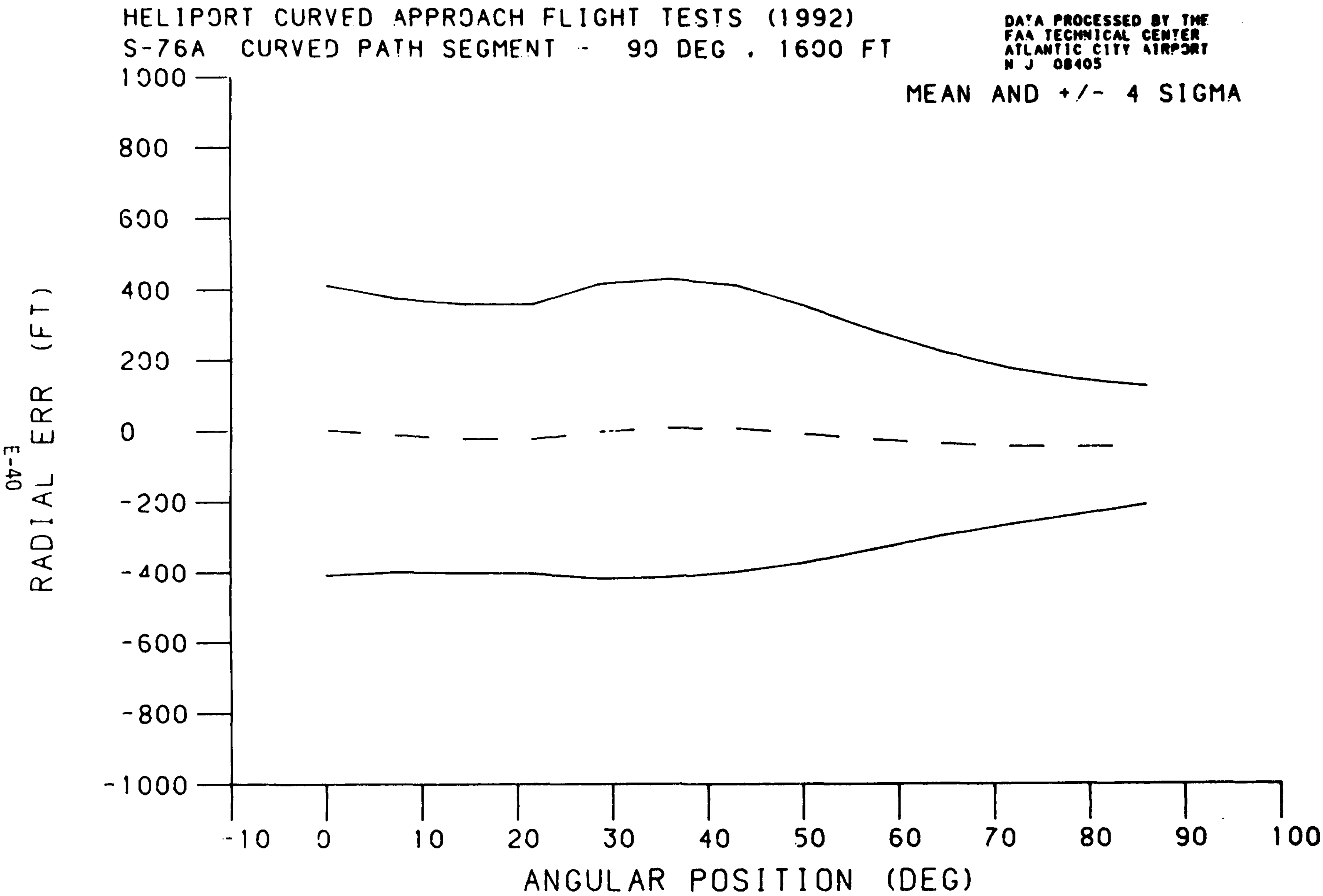

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
500
400
300
200
100
0
-100
-200
-300
-400
-500
-600
-700
ALTITUDE ERR (FT)
-10
10
30
50
70
90
110
130
150
170
190
210
ANGULAR POSITION (DEG)

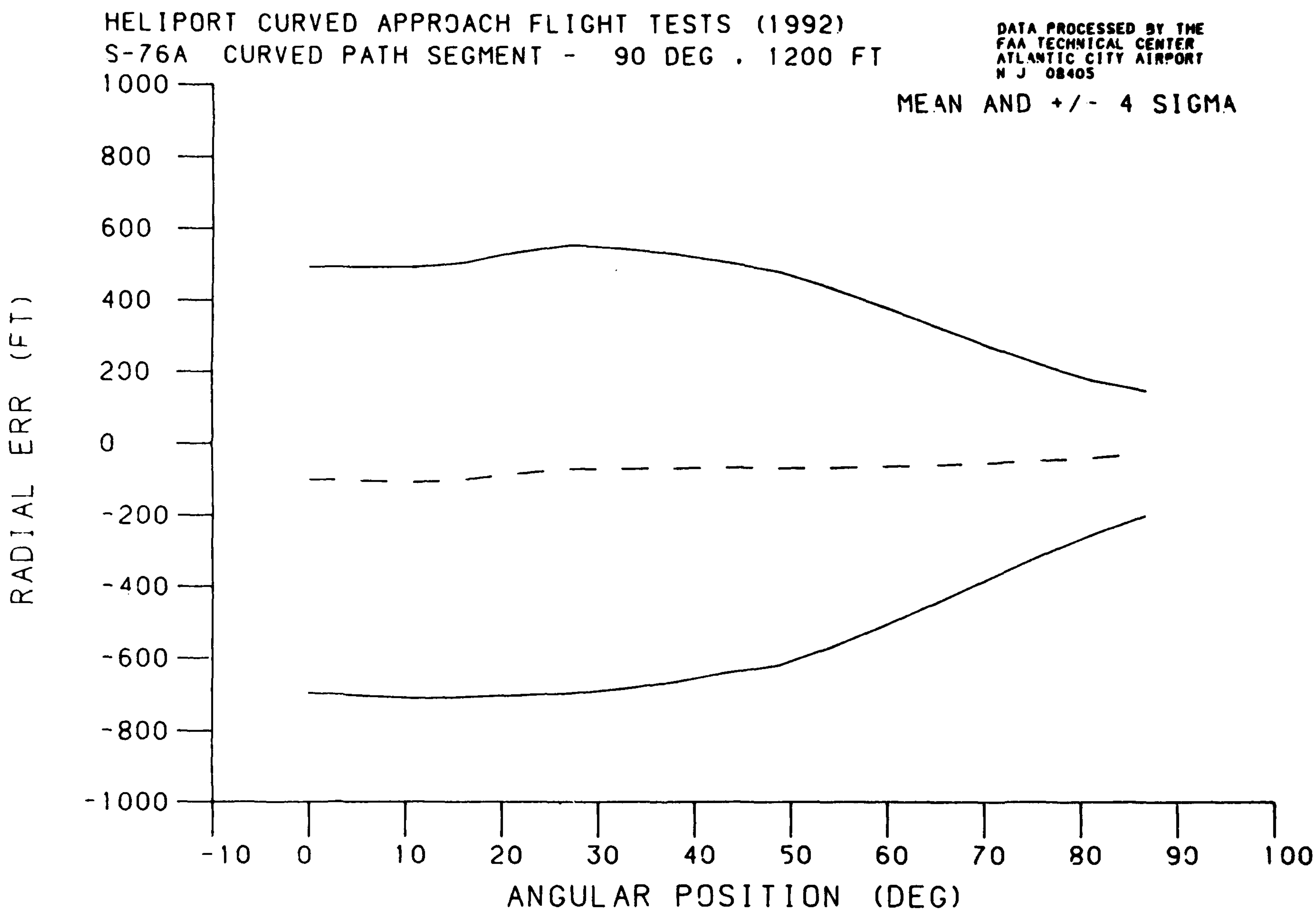
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG , 1600 FT

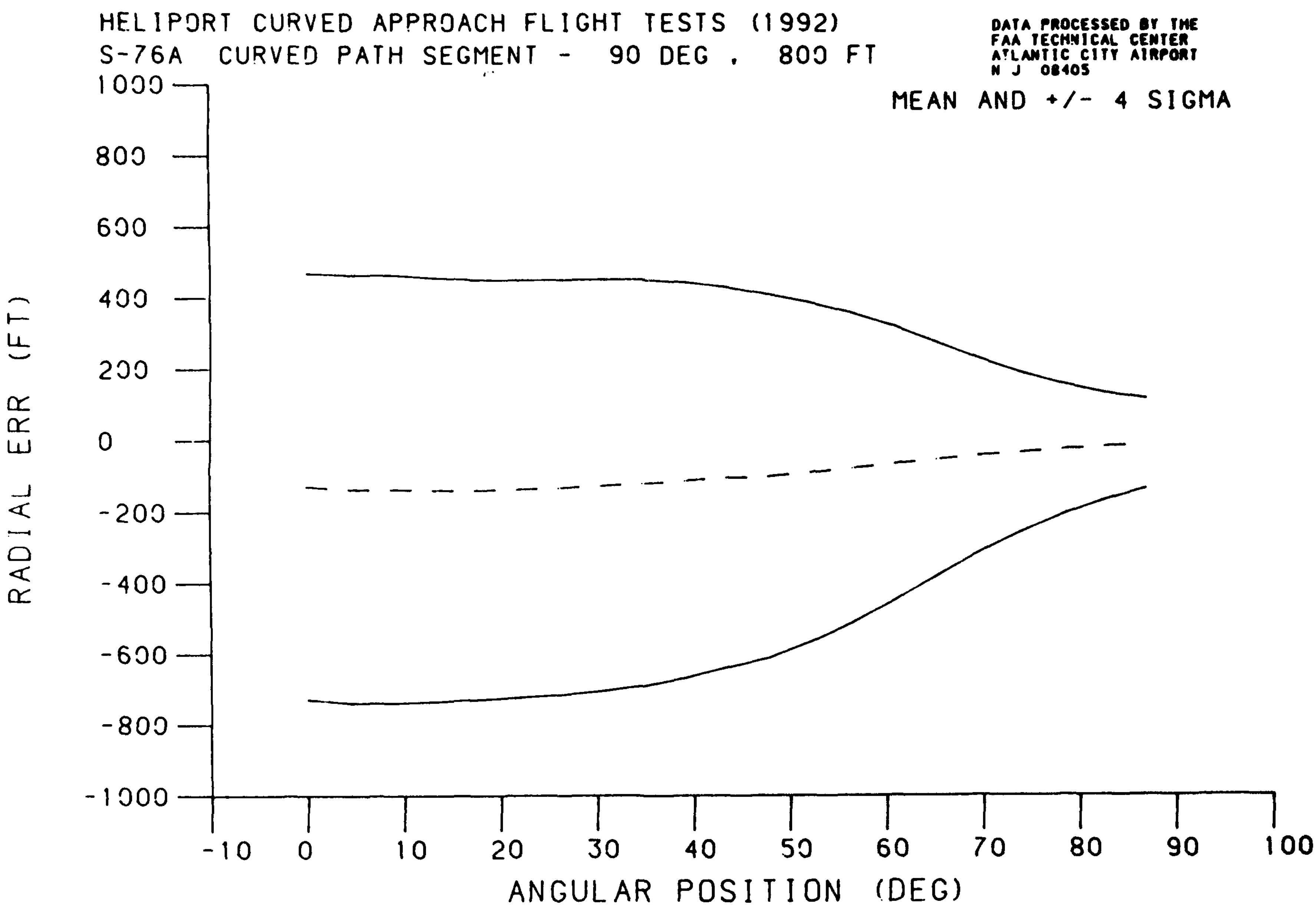


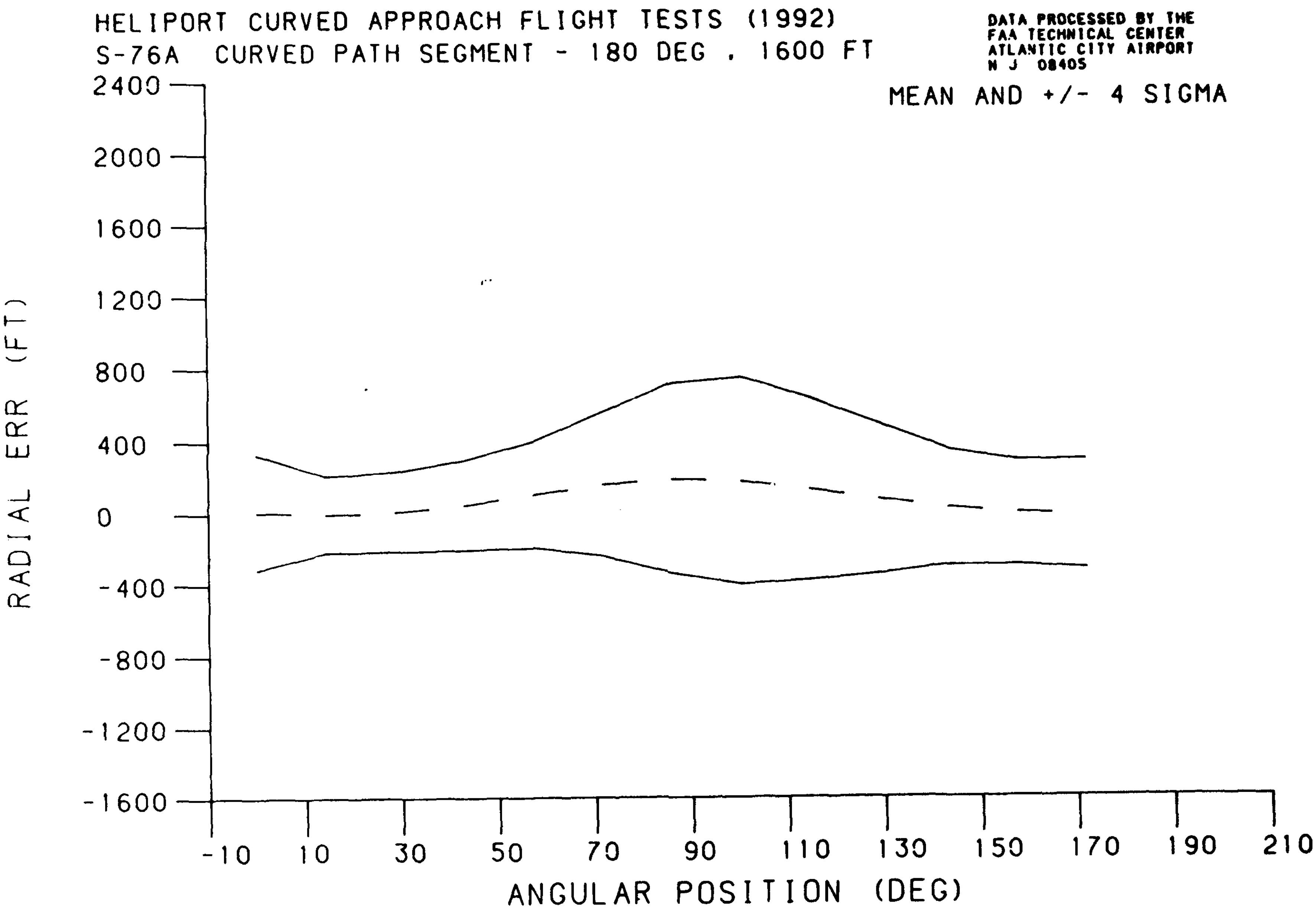

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG . 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
RADIAL ERR (FT)
1000
800
600
400
200
0
-200
-400
-600
-800
-1000
-5
0
5
10
15
20
25
30
35
40
45
50
ANGULAR POSITION (DEG)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
RADIAL ERR (FT)
1000
800
600
400
200
0
-200
-400
-600
-800
-1000
-5
0
5
10
15
20
25
30
35
40
45
50
ANGULAR POSITION (DEG)

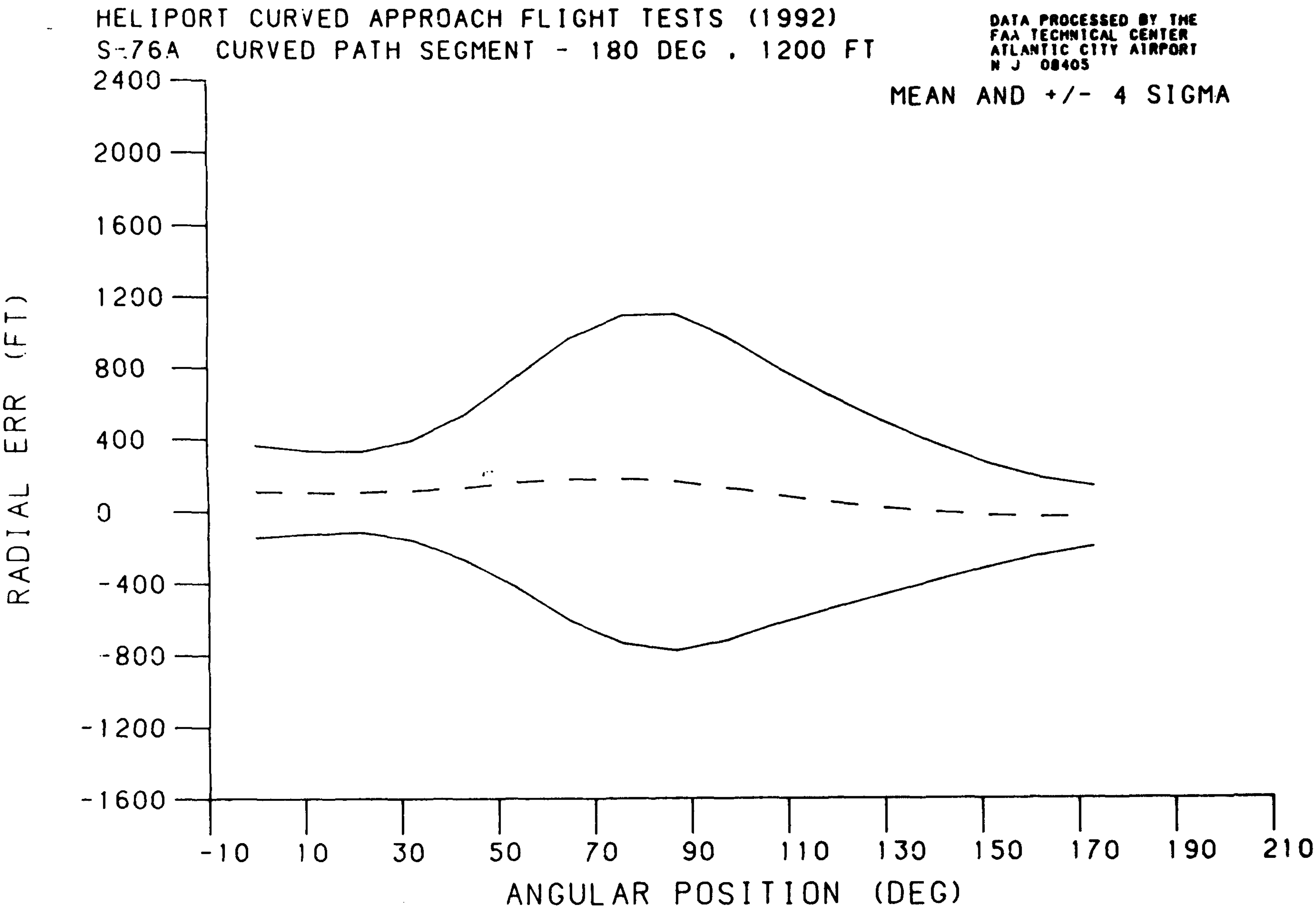

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG . 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
RADIAL ERR (FT)
1000
800
600
400
200
0
-200
-400
-600
-800
-1000
-10
0
10
20
30
40
50
60
70
80
90
100
ANGULAR POSITION (DEG)

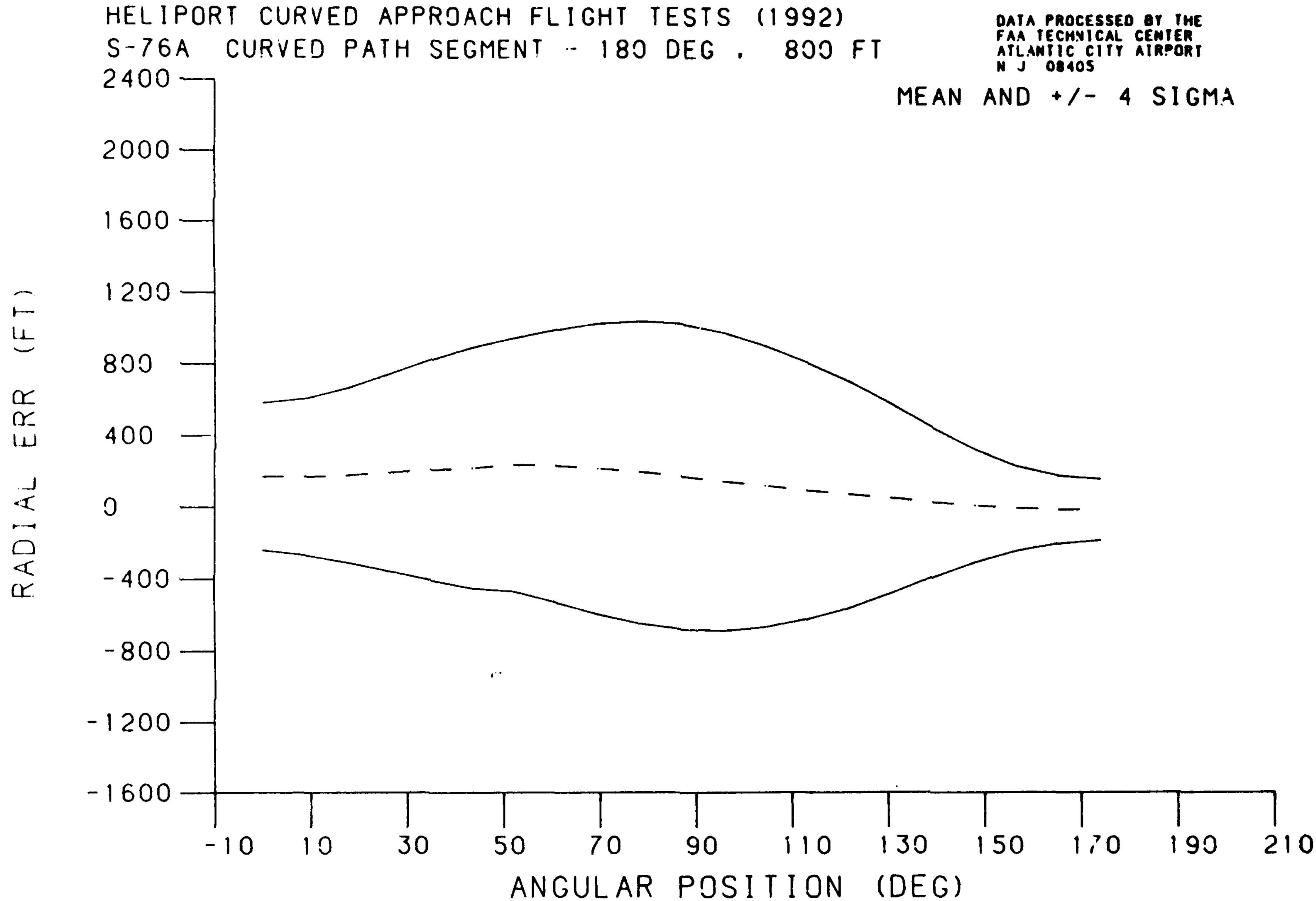

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG . 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
RADIAL ERR (FT)
1000
800
600
400
200
0
-200
-400
-600
-800
-1000
-10
0
10
20
30
40
50
60
70
80
90
100
ANGULAR POSITION (DEG)

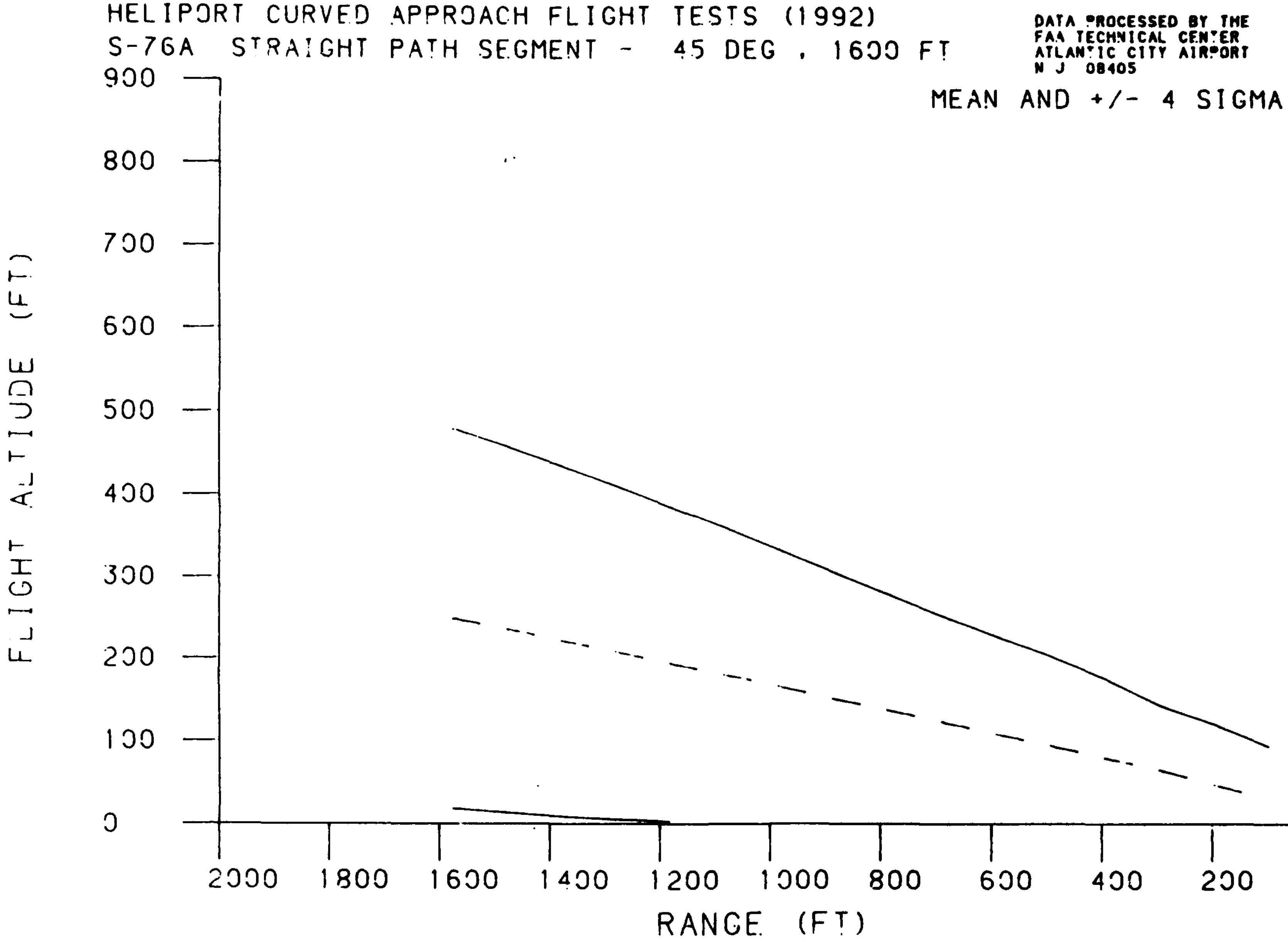

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
RADIAL ERR (FT)
1000
800
600
400
200
0
-200
-400
-600
-800
-1000
-10
0
10
20
30
40
50
60
70
80
90
100
ANGULAR POSITION (DEG)

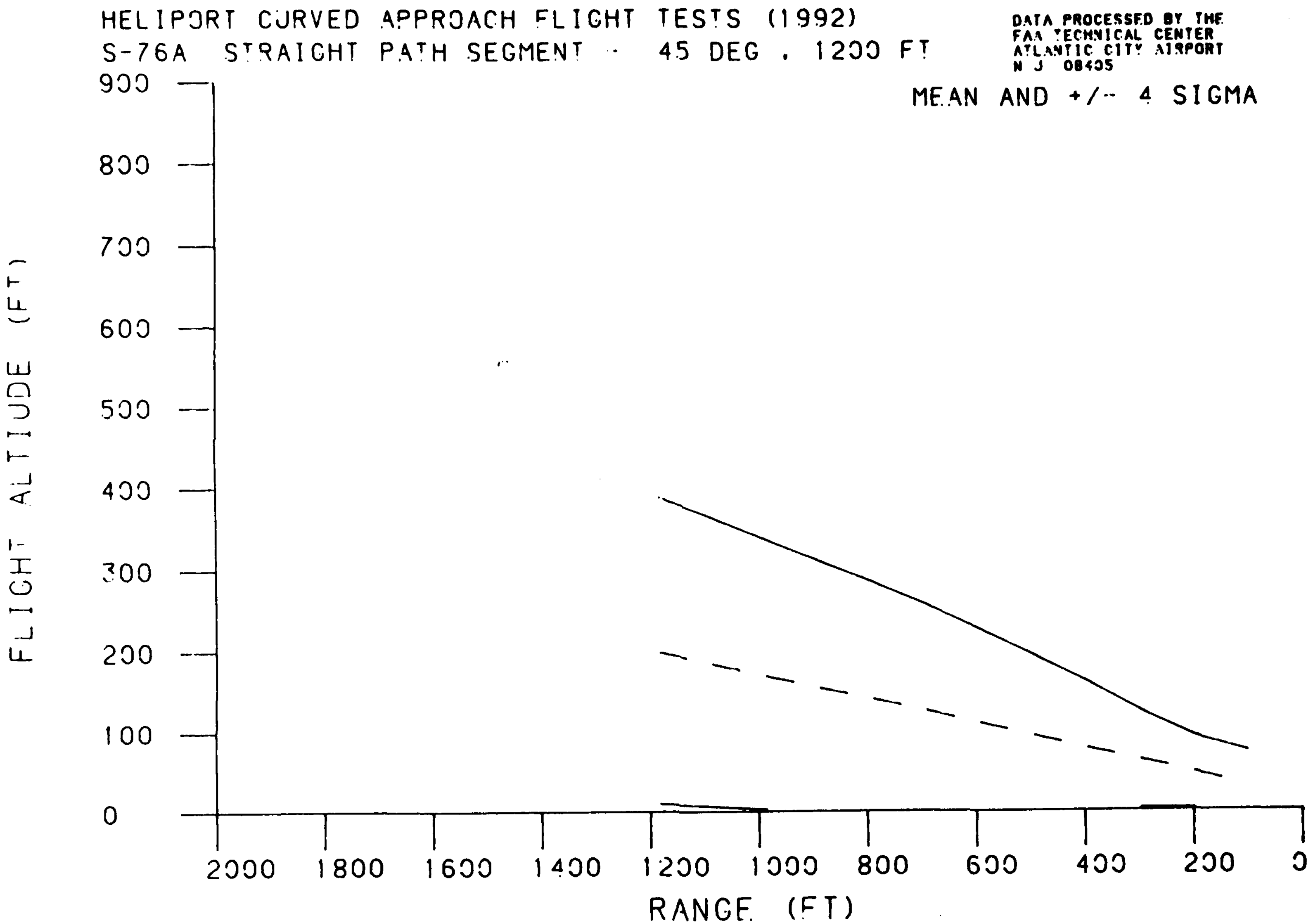


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG , 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
RADIAL ERR (FT)
2400
2000
1600
1200
800
400
0
-400
-800
-1200
-1600
-10
10
30
50
70
90
110
130
150
170
190
210
ANGULAR POSITION (DEG)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG , 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
RADIAL ERR (FT)
2400
2000
1600
1200
800
400
0
-400
-800
-1200
-1600
-10
10
30
50
70
90
110
130
150
170
190
210
ANGULAR POSITION (DEG)

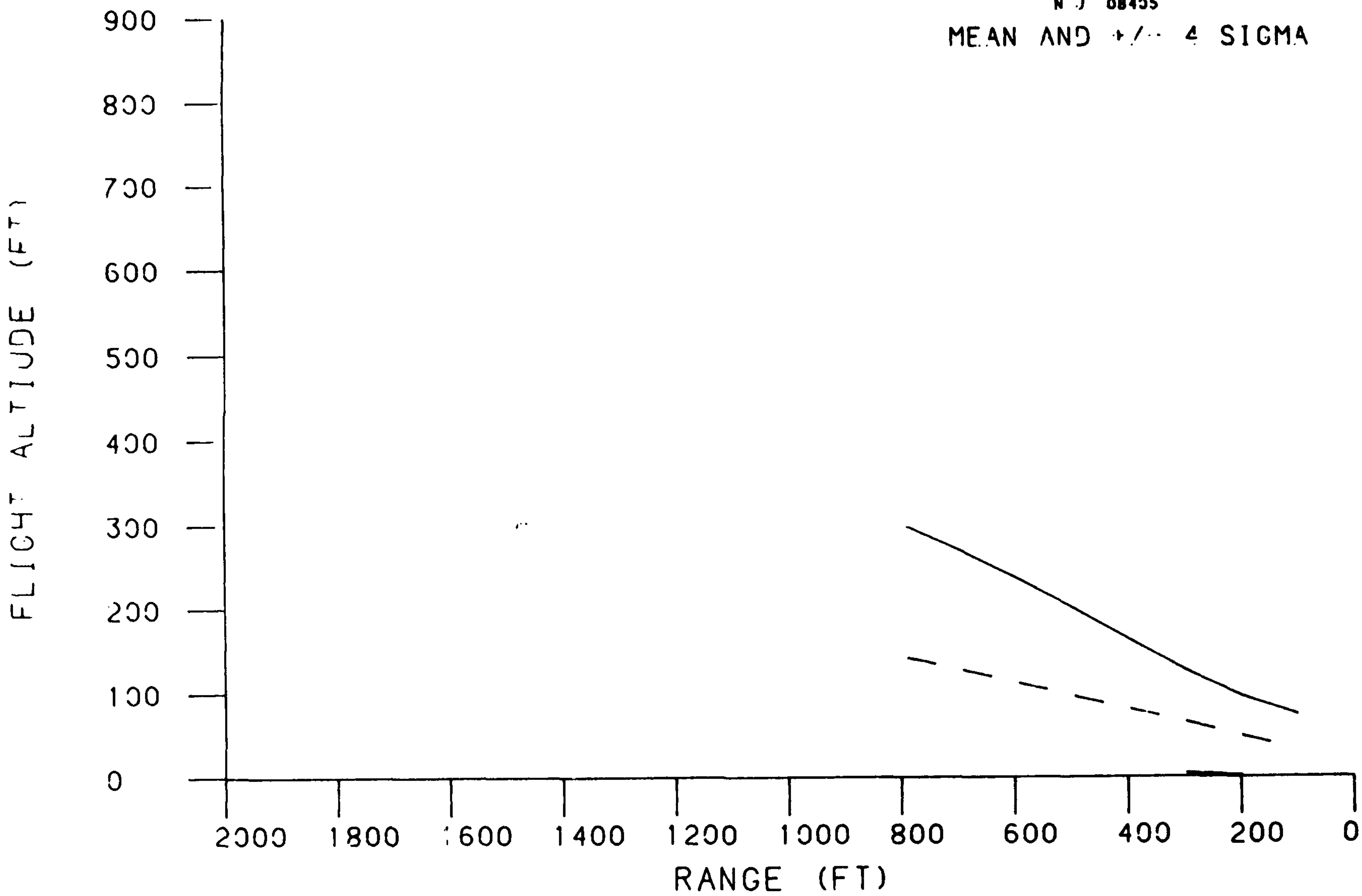

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
RADIAL ERR (FT)
2400
2000
1600
1200
800
400
0
-400
-800
-1200
-1600
-10
10
30
50
70
90
110
130
150
170
190
210
ANGULAR POSITION (DEG)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 45 DEG , 1600 FT
DATA PROCESSED BY THE FAA TECHNICAL CENTER ATLANTIC CITY AIRPORT N J 08405
MEAN AND +/- 4 SIGMA
FLIGHT ALTITUDE (FT)
900
800
700
600
500
400
300
200
100
0
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)

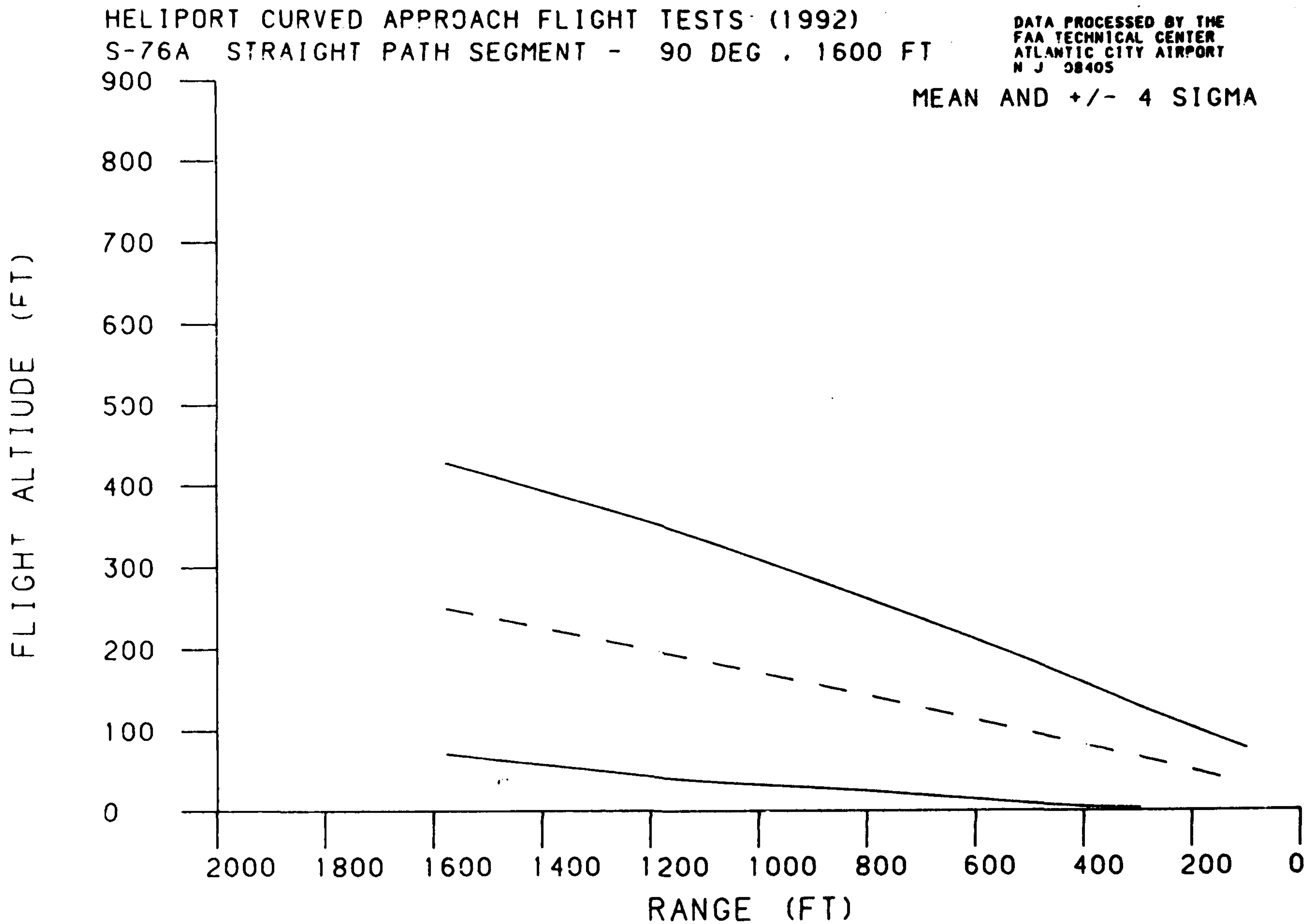


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 45 DEG , 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
FLIGHT ALTITUDE (FT)
900
800
700
600
500
400
300
200
100
0
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 45 DEG , 800 FT

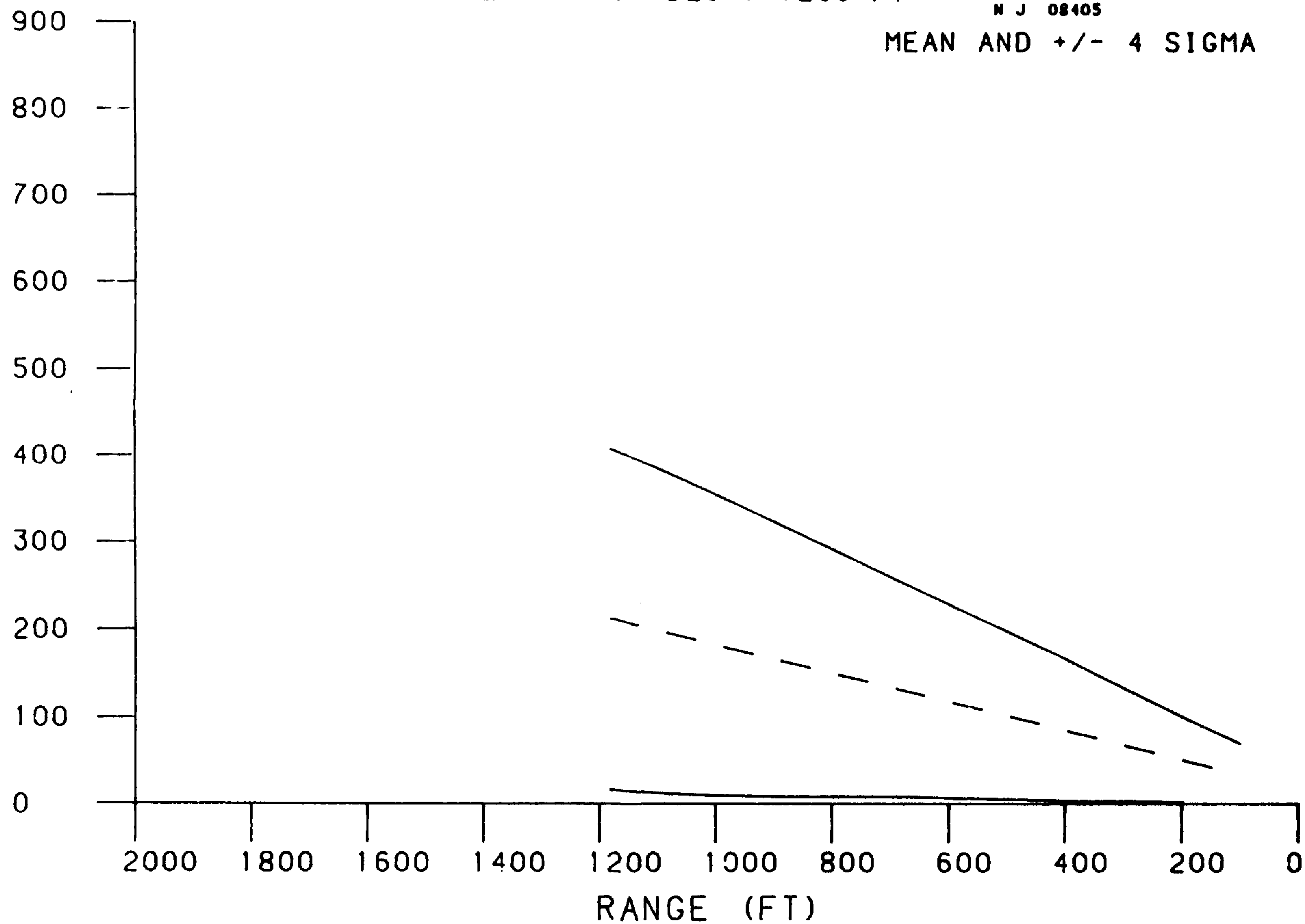


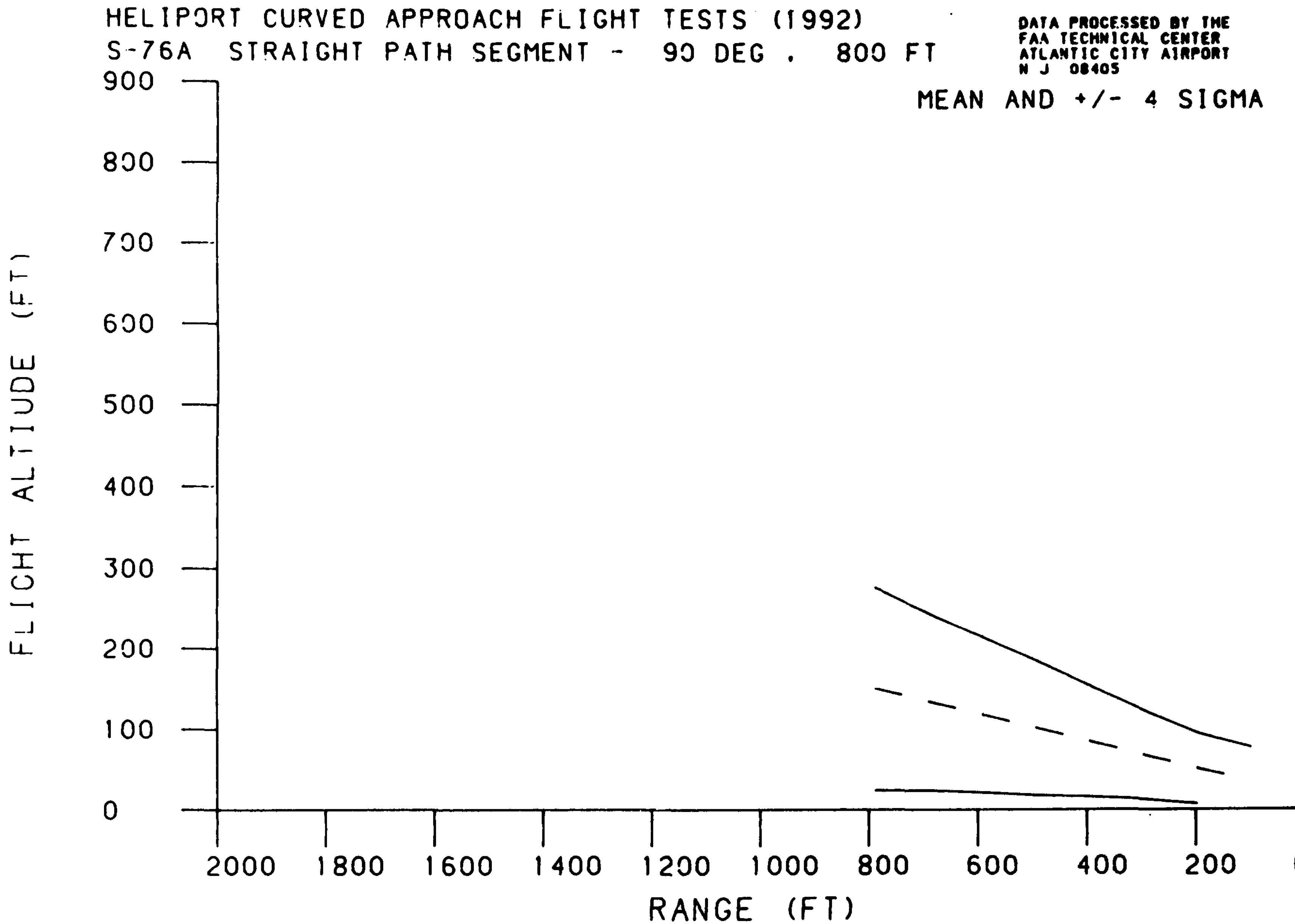
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 90 DEG , 1600 FT



HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 90 DEG , 1200 FT

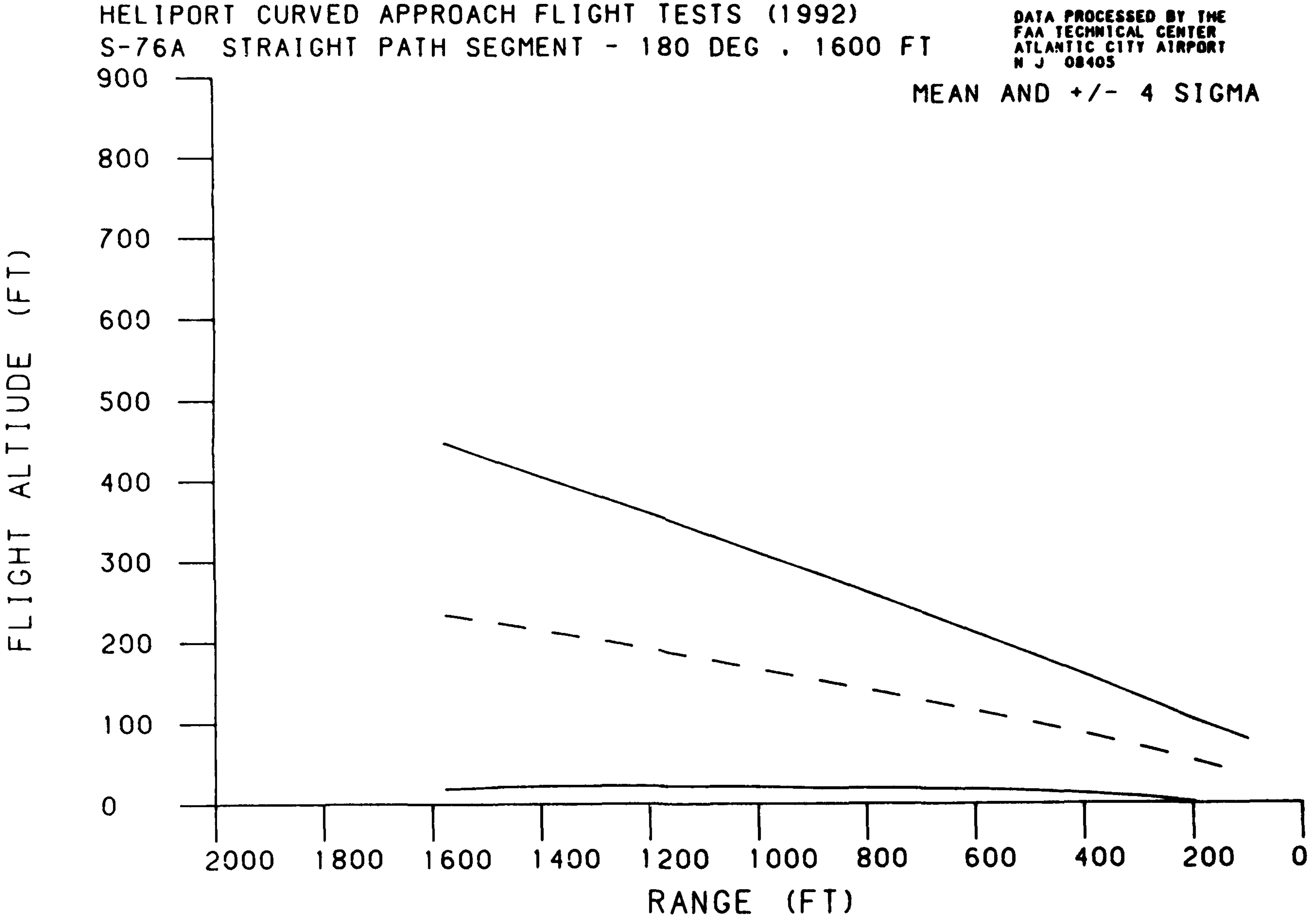
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405





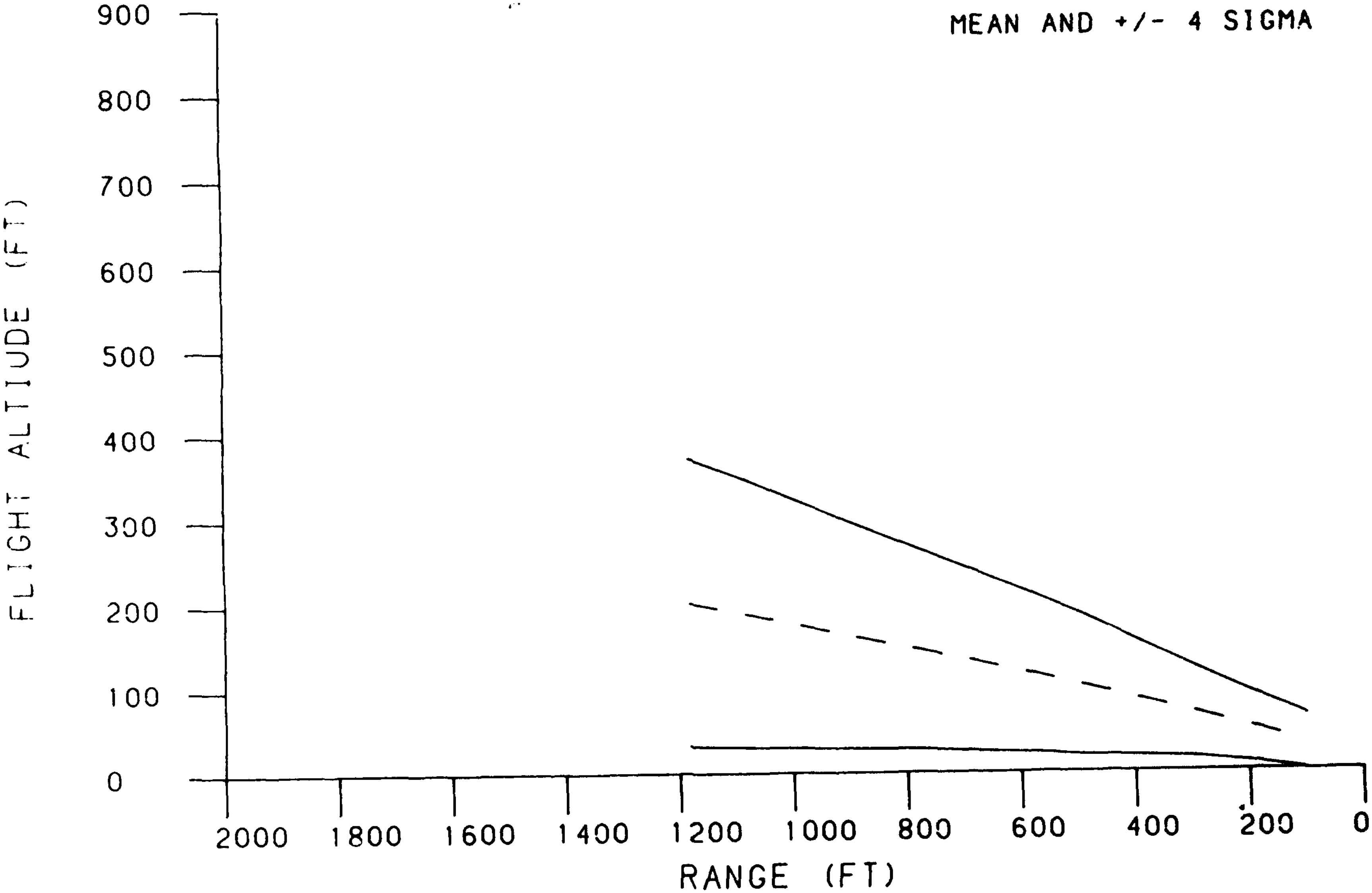
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 90 DEG . 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
FLIGHT ALTITUDE (FT)
900
800
700
600
500
400
300
200
100
0
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)

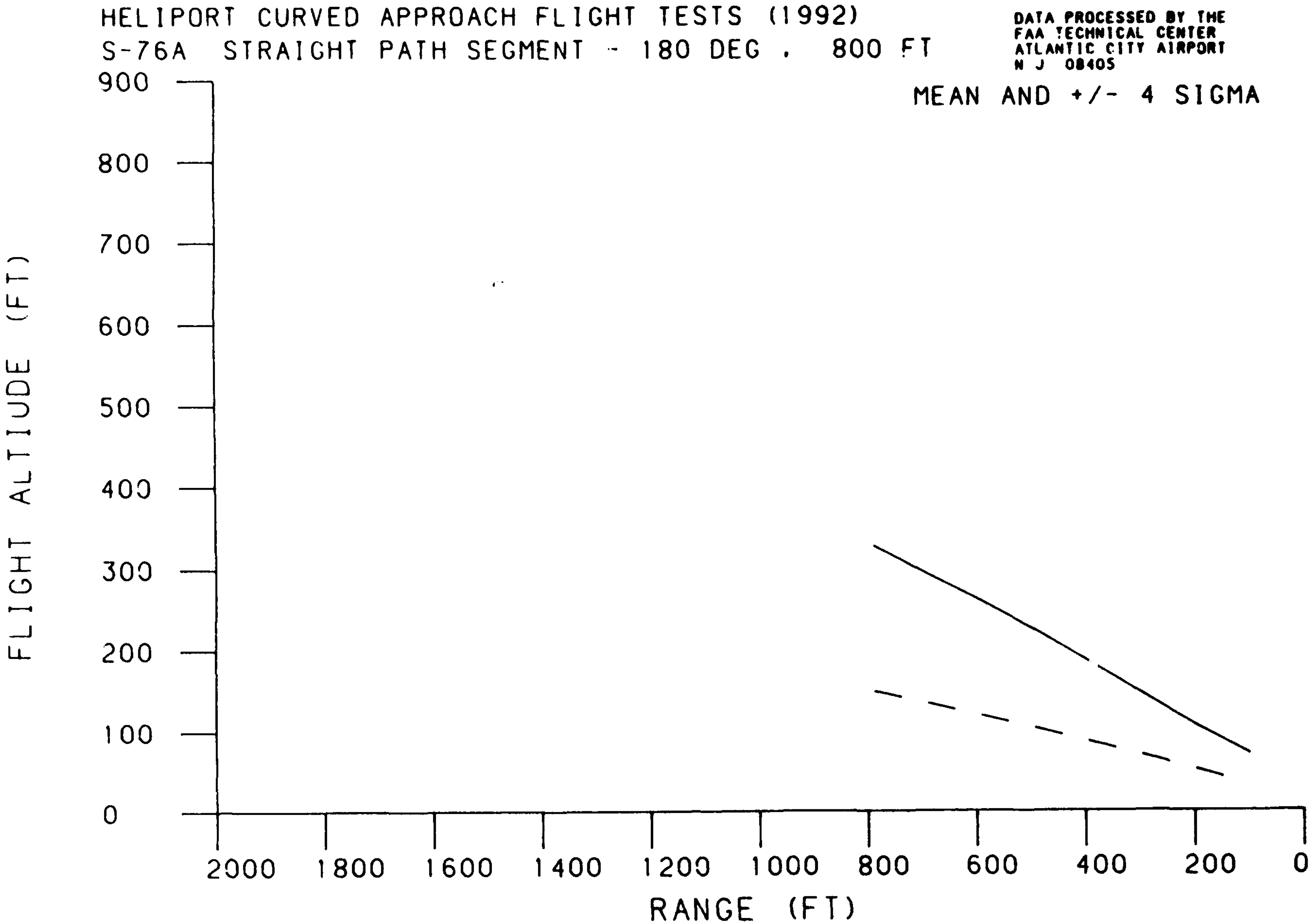
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 180 DEG , 1600 FT



HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 180 DEG , 1200 FT

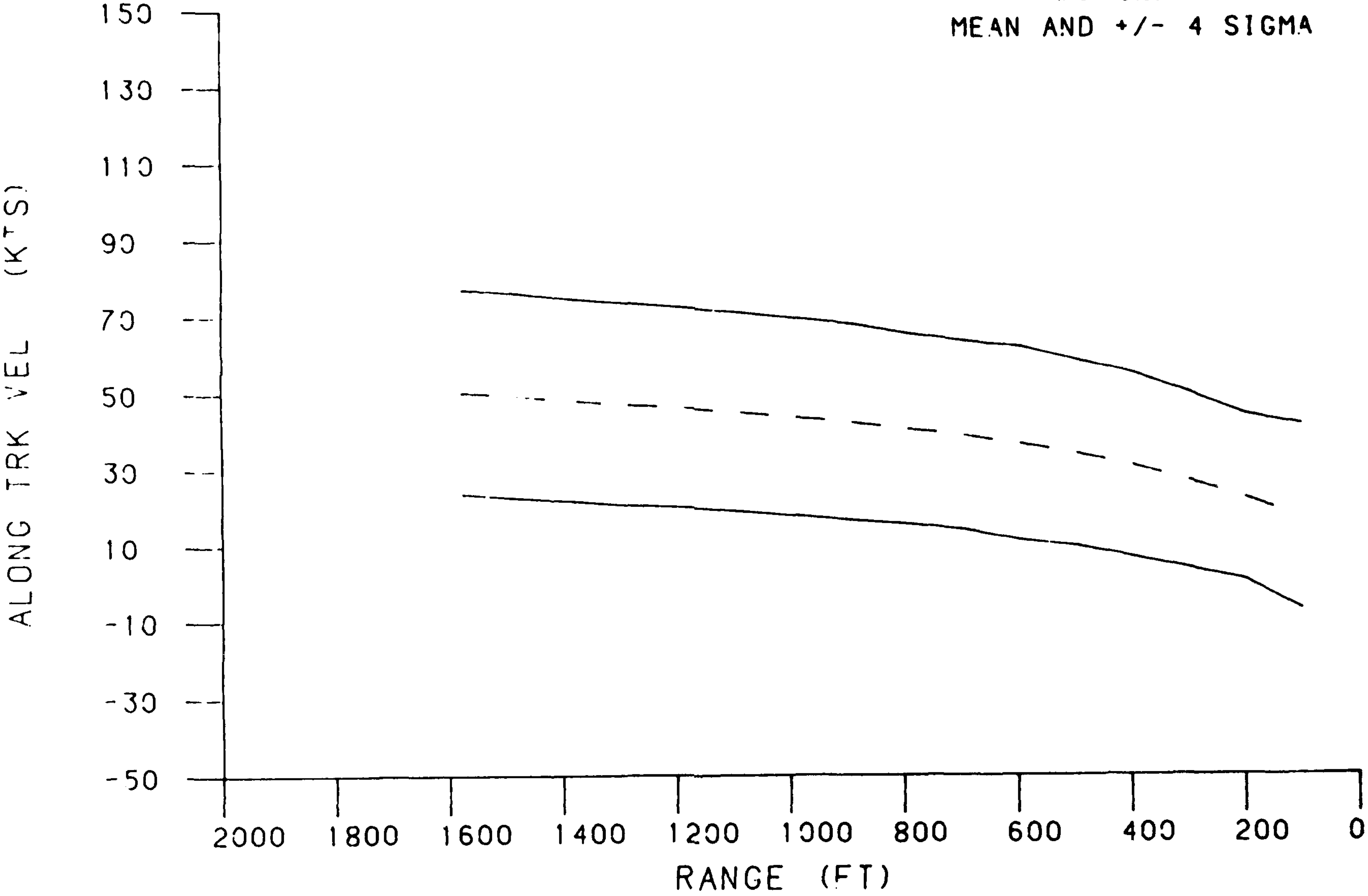
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405

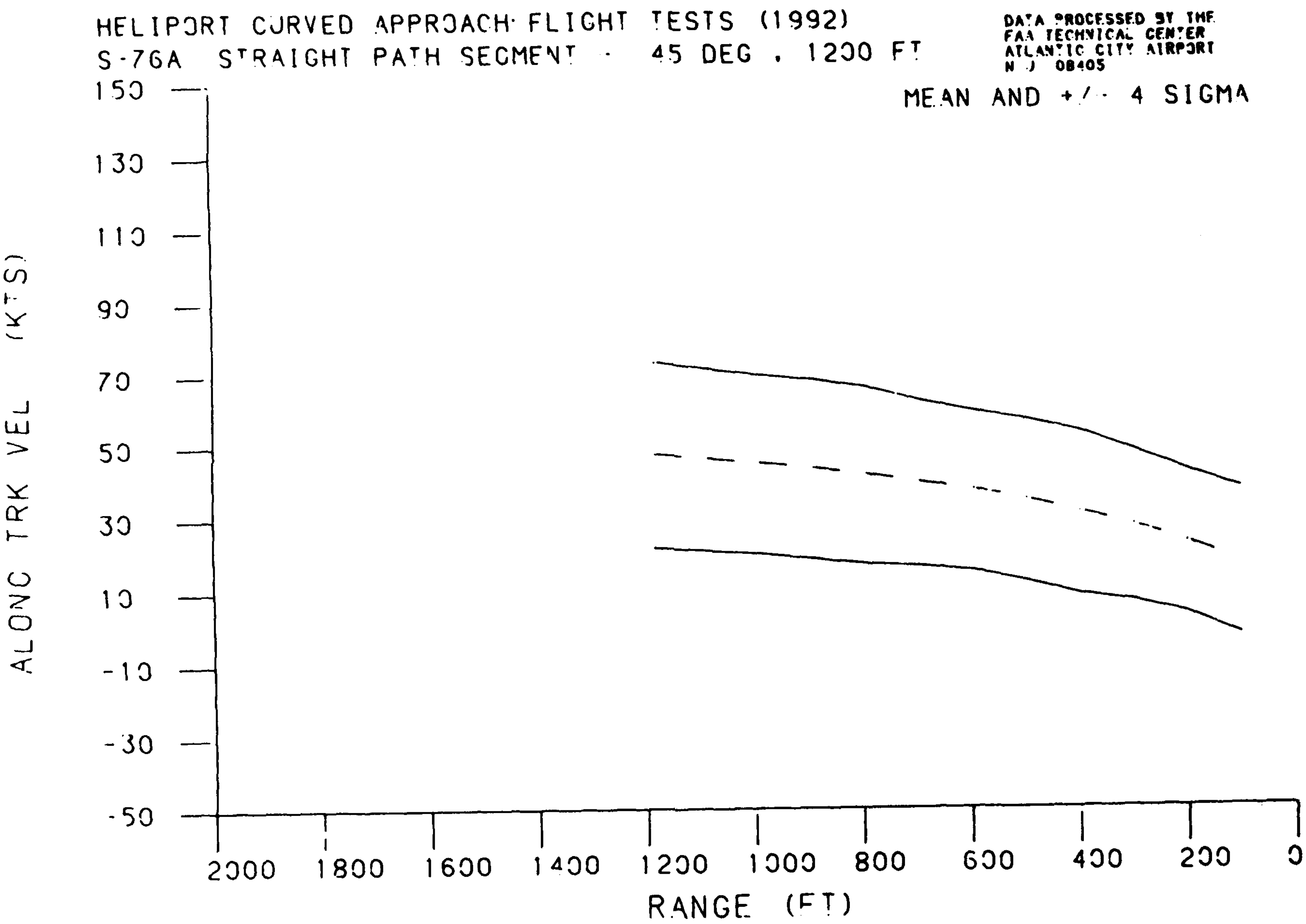


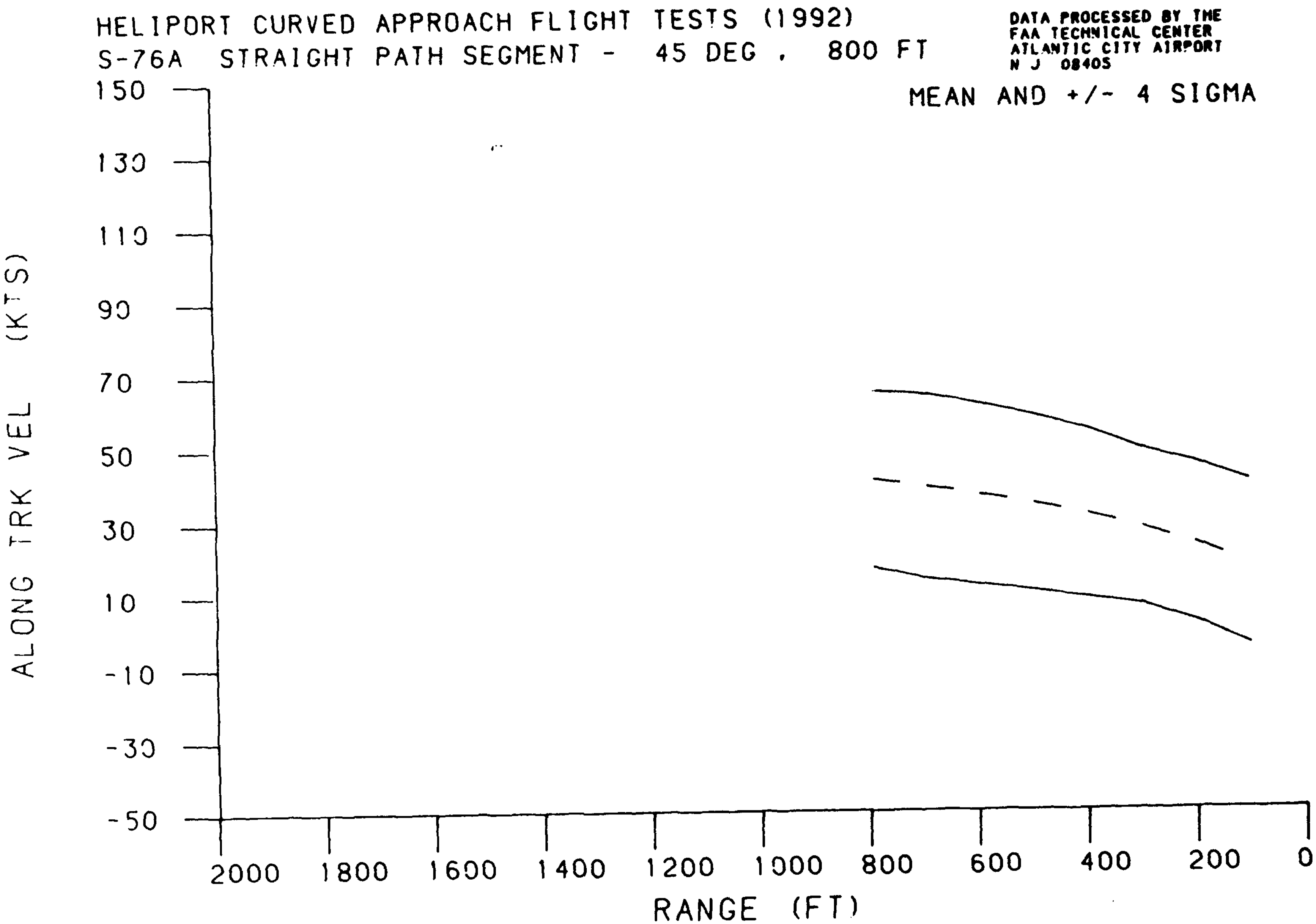

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 180 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
FLIGHT ALTIUDE (FT)
900
800
700
600
500
400
300
200
100
0
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)

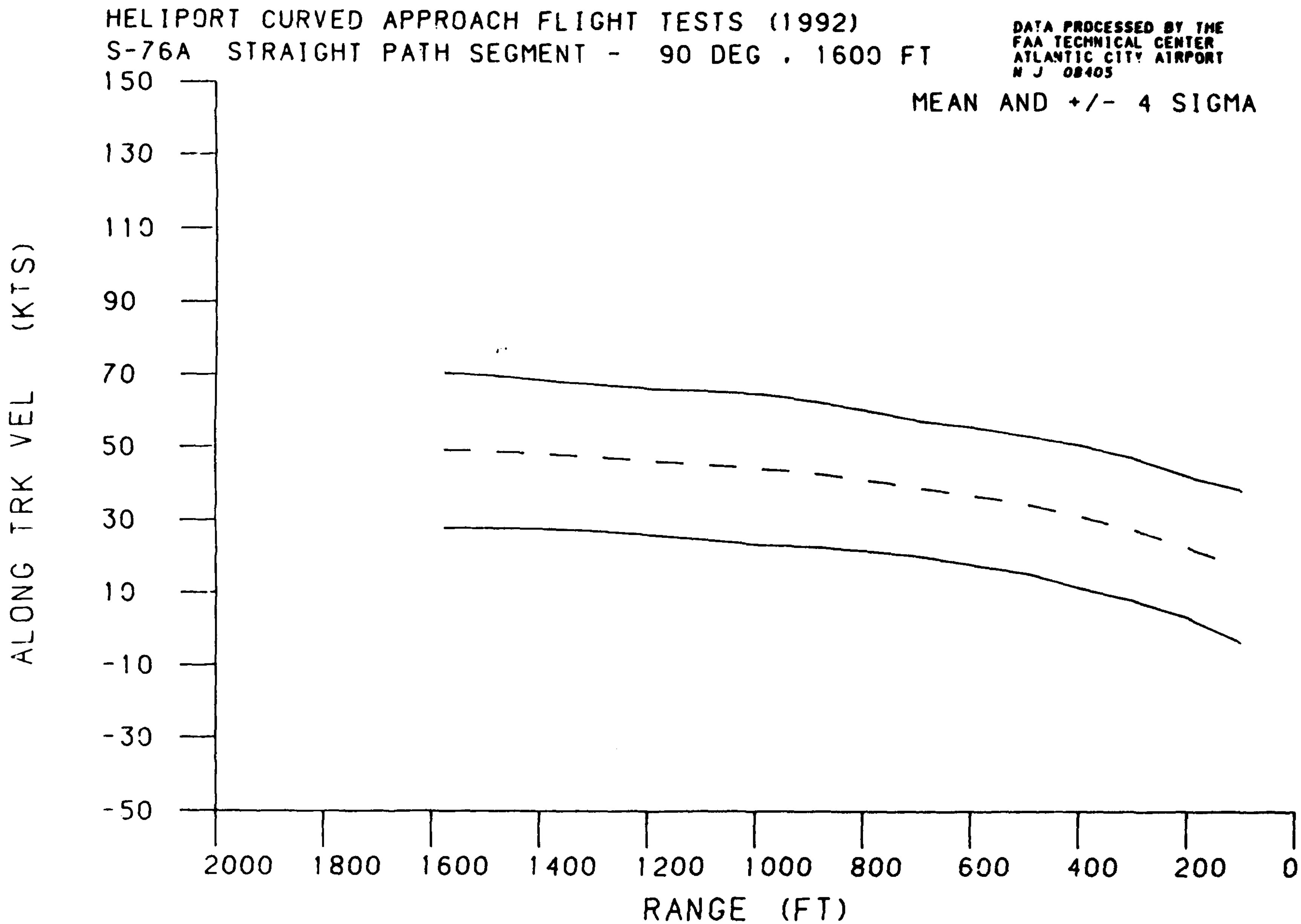
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 45 DEG , 1600 FT

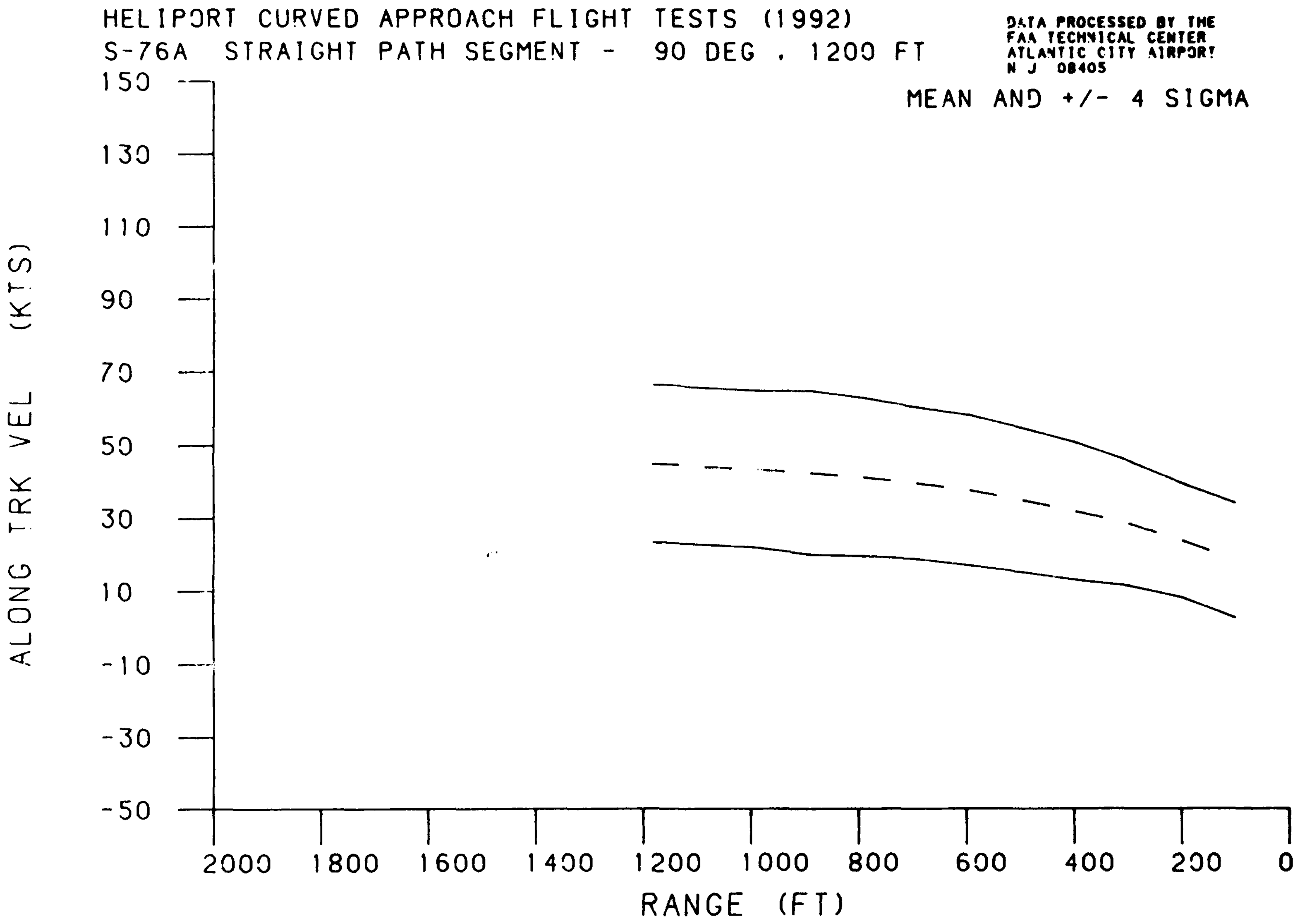
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405

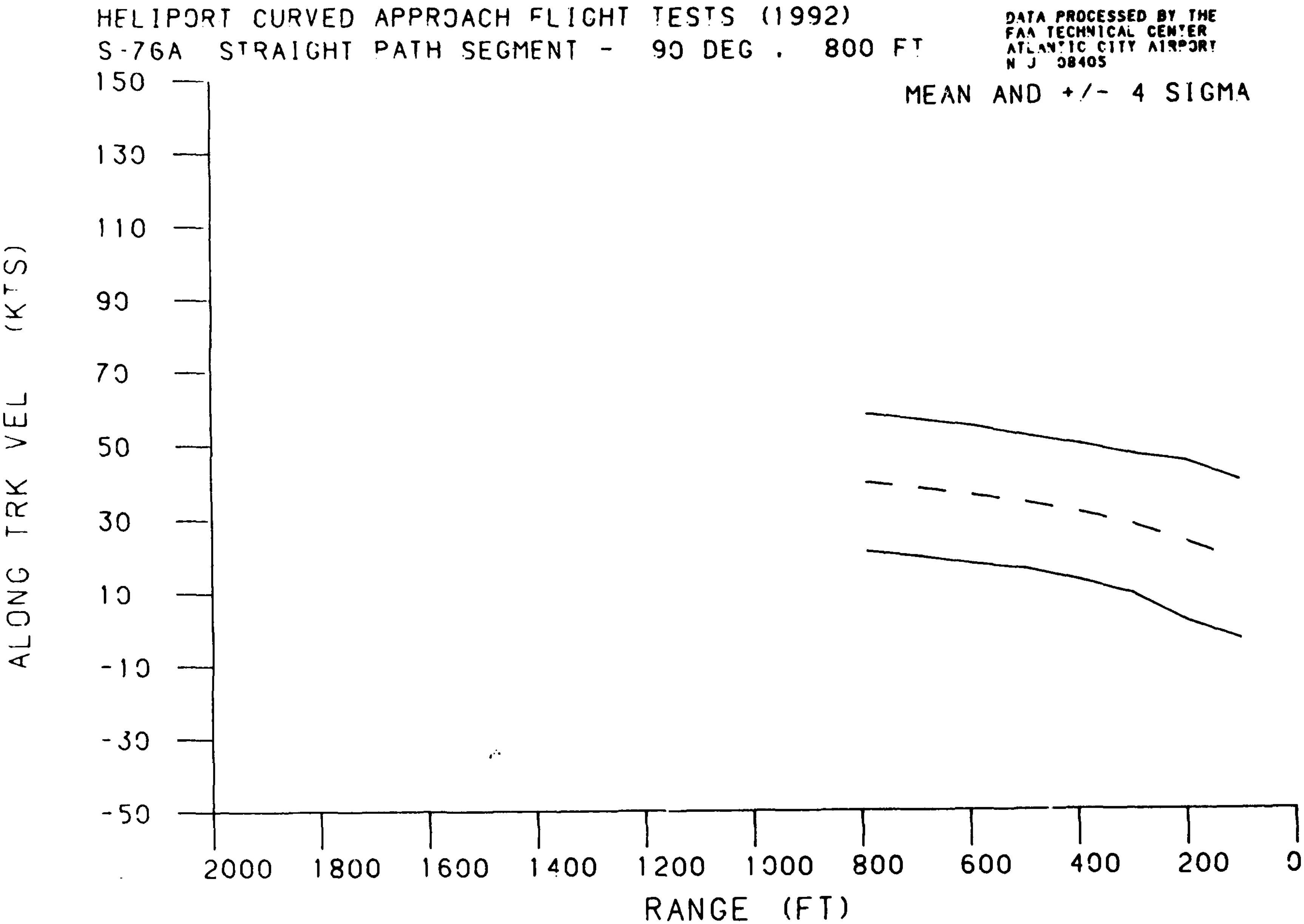



HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 45 DEG, 1200 FT
DATA PROCESSED BY THE FAA TECHNICAL CENTER ATLANTIC CITY AIRPORT N J 08405
MEAN AND +/- 4 SIGMA
ALONG TRK VEL (KTS)
150
130
110
90
70
50
30
10
-10
-30
-50
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)

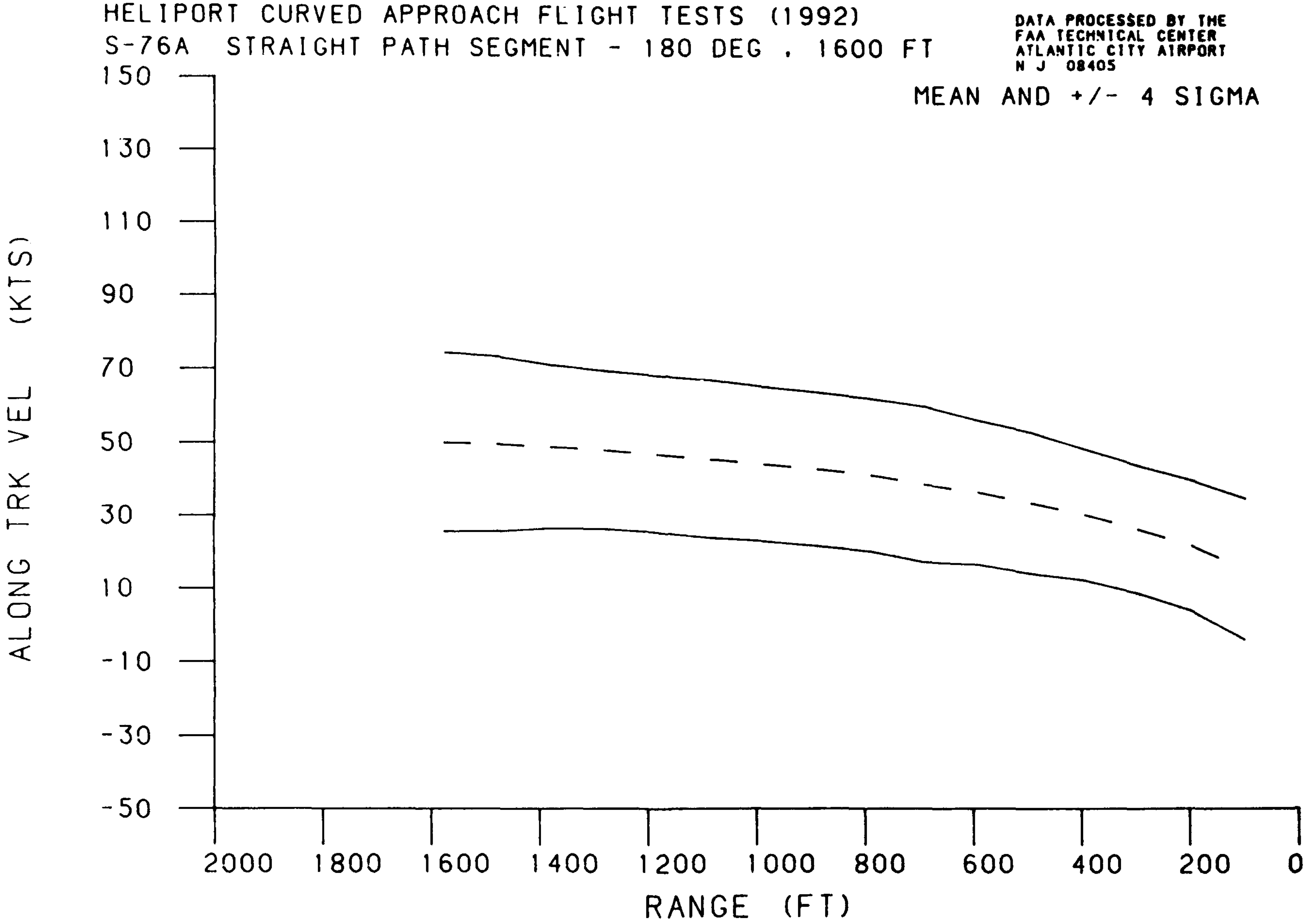

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 45 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
ALONG TRK VEL (KTS)
150
130
110
90
70
50
30
10
-10
-30
-50
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)

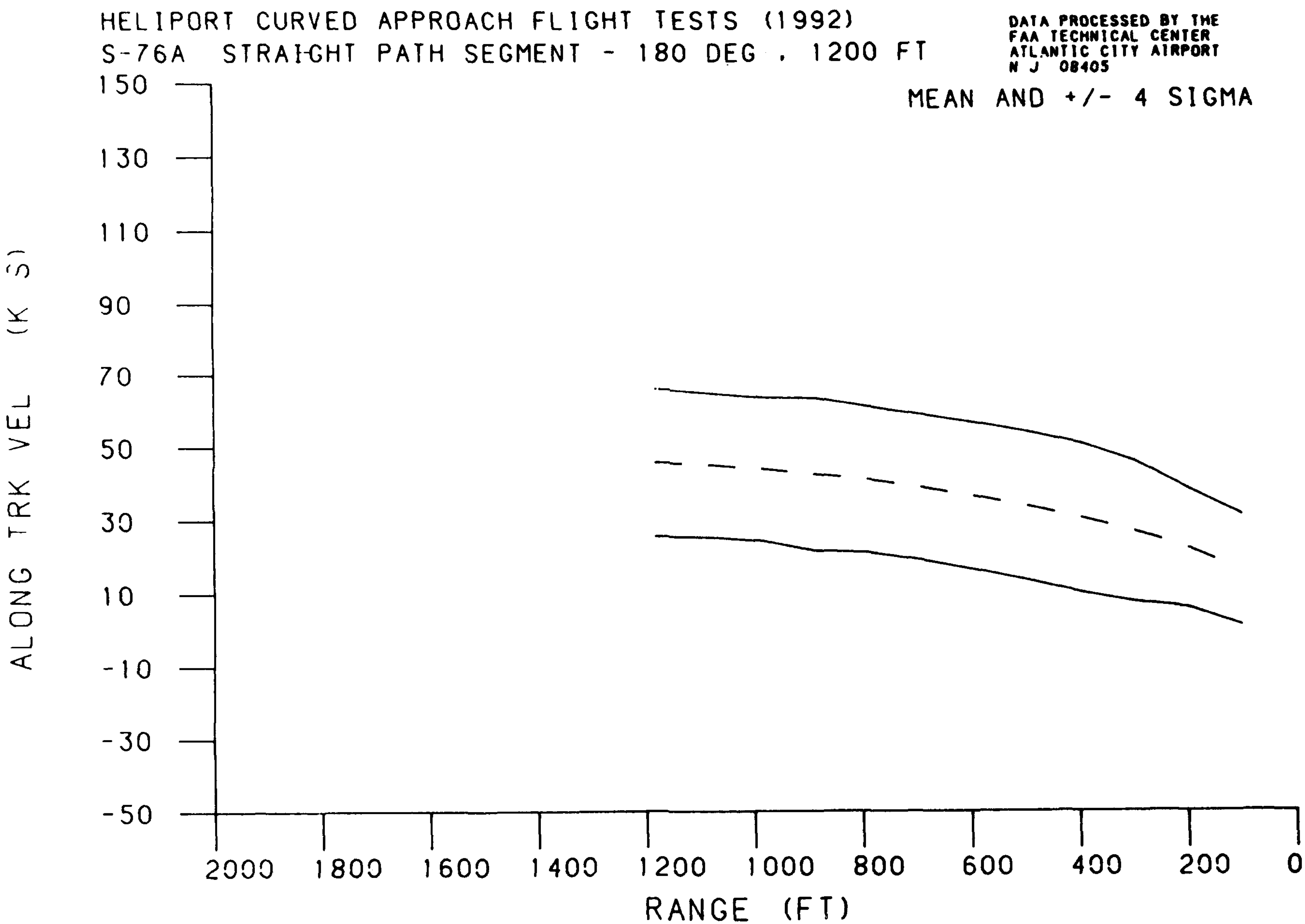

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 90 DEG , 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
ALONG TRK VEL (KTS)
150
130
110
90
70
50
30
10
-10
-30
-50
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)

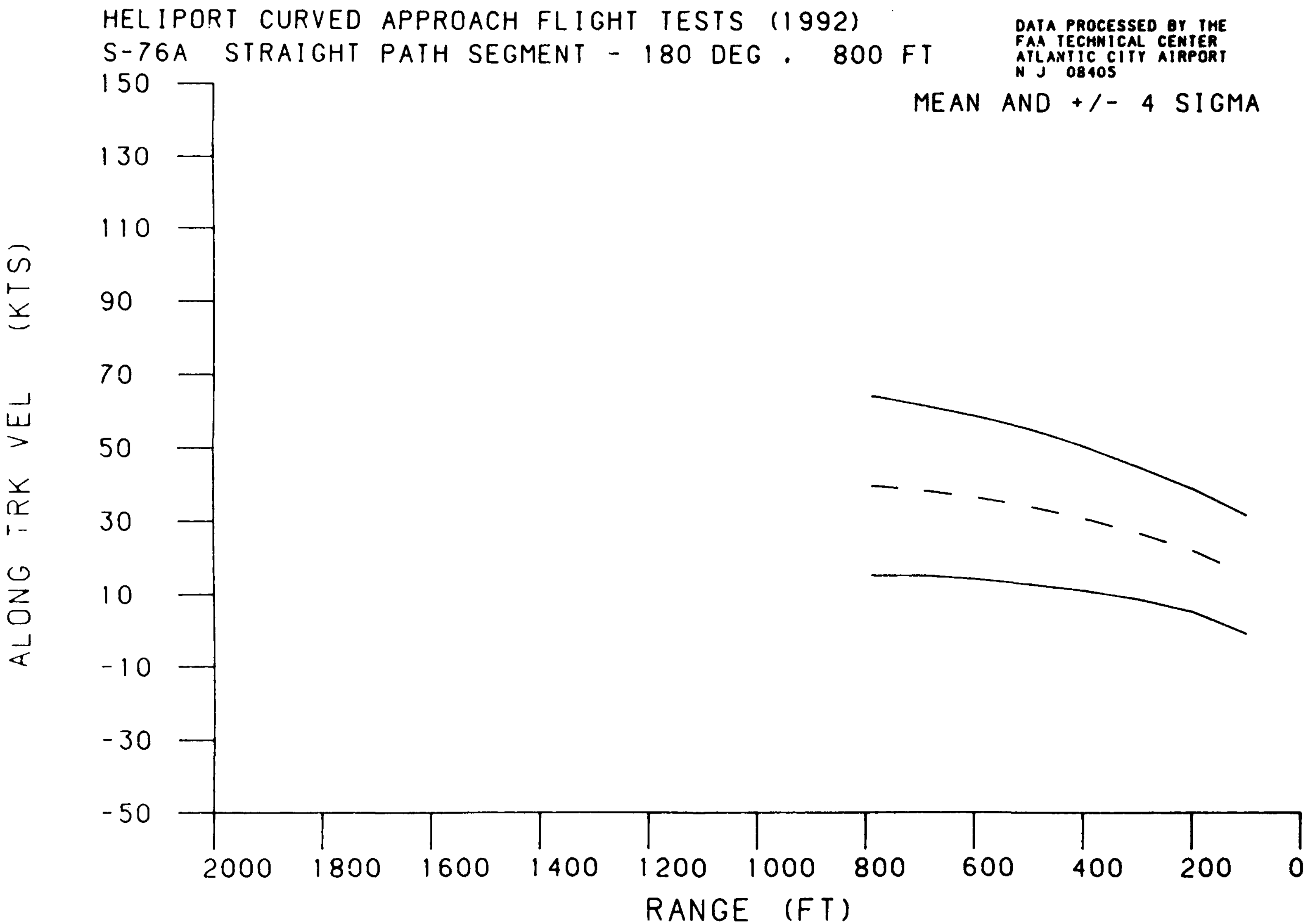

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 90 DEG , 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
ALONG TRK VEL (KTS)
150
130
110
90
70
50
30
10
-10
-30
-50
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 90 DEG . 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
ALONG TRK VEL (KTS)
150
130
110
90
70
50
30
10
-10
-30
-50
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)

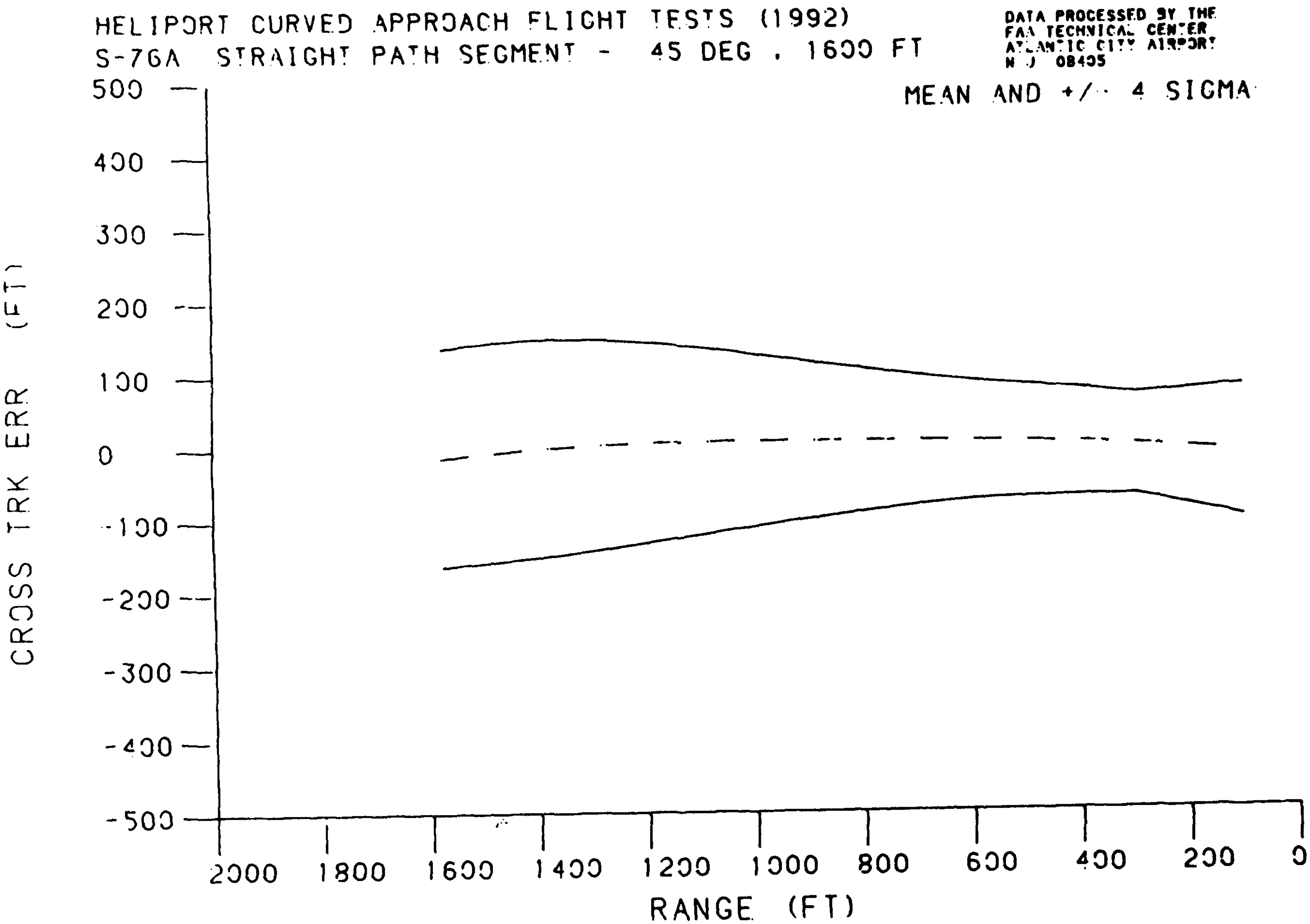
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 180 DEG , 1600 FT

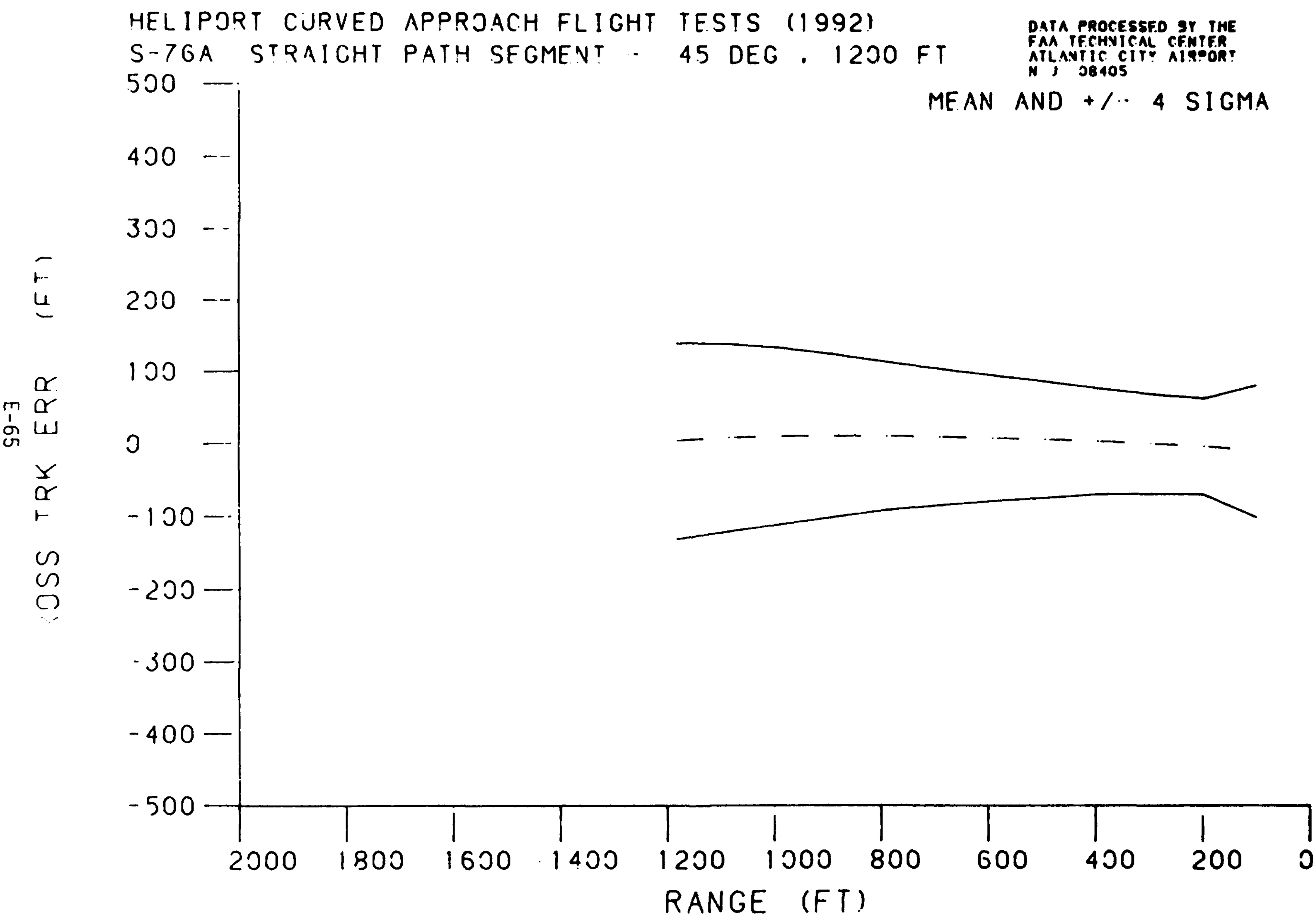



HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 180 DEG , 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
150
130
110
90
70
50
30
10
-10
-30
-50
ALONG TRK VEL (K S)
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)

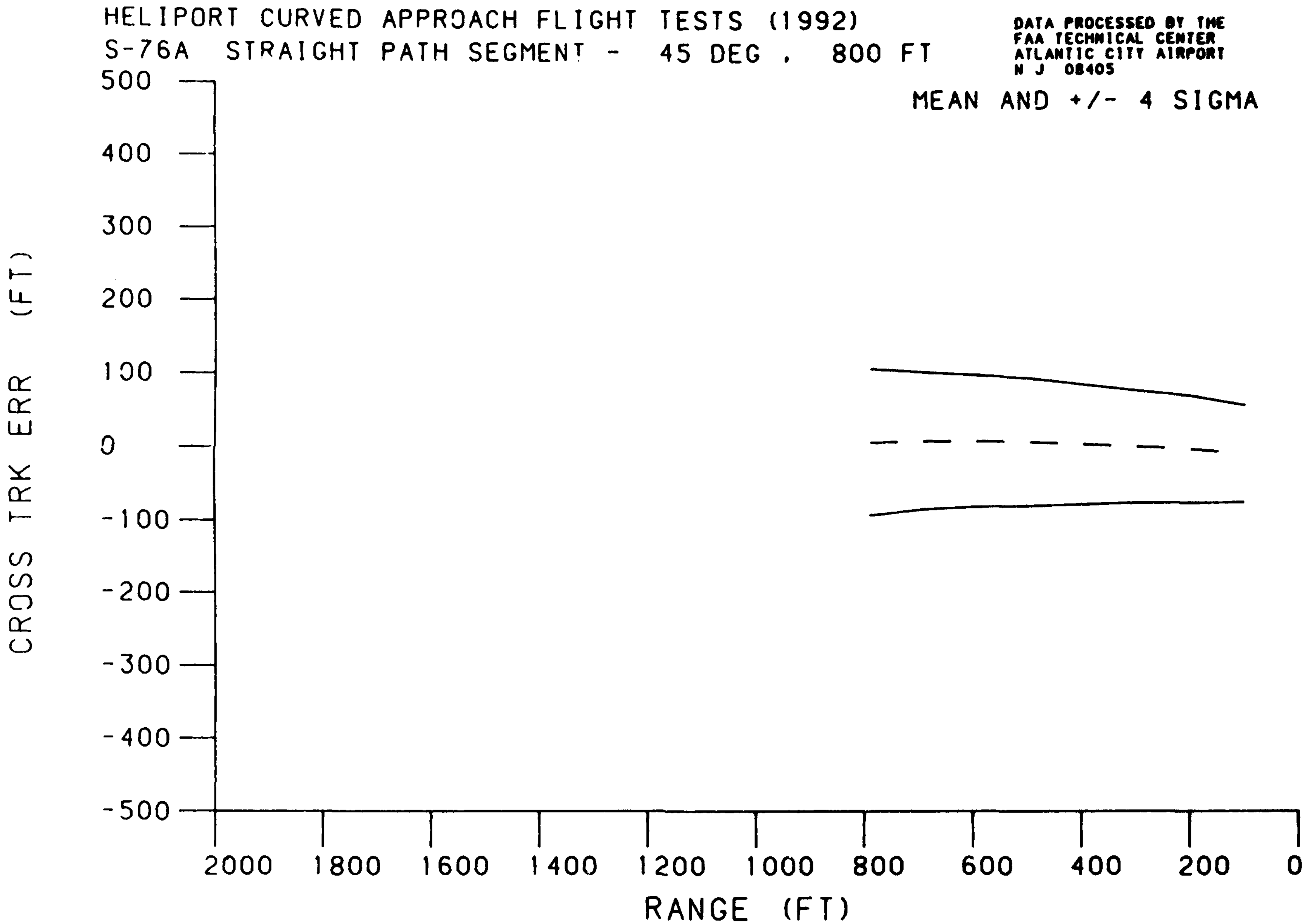

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 180 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
150
130
110
90
70
50
30
10
-10
-30
-50
ALONG TRK VEL (KTS)
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)

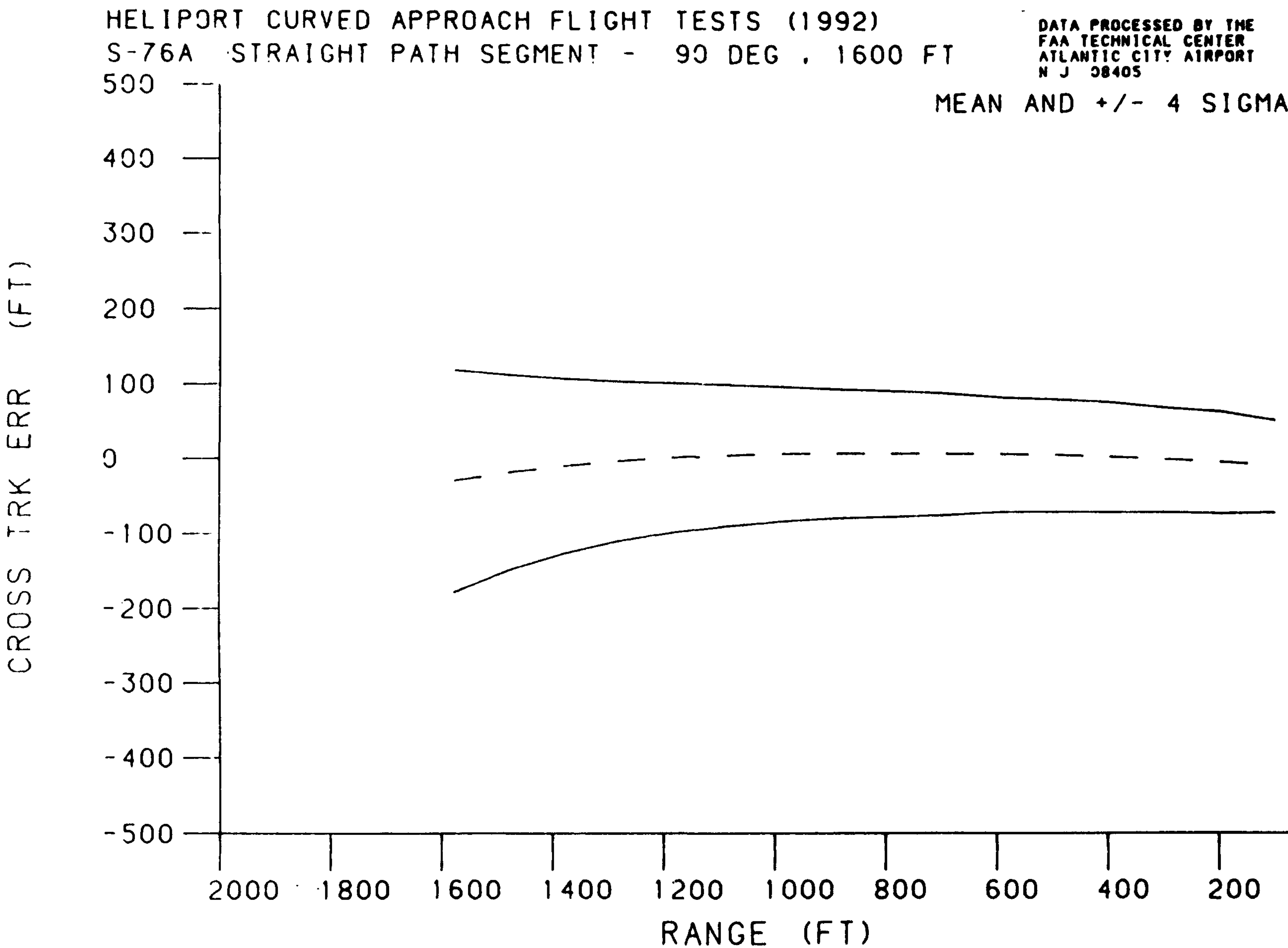
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 45 DEG , 1600 FT





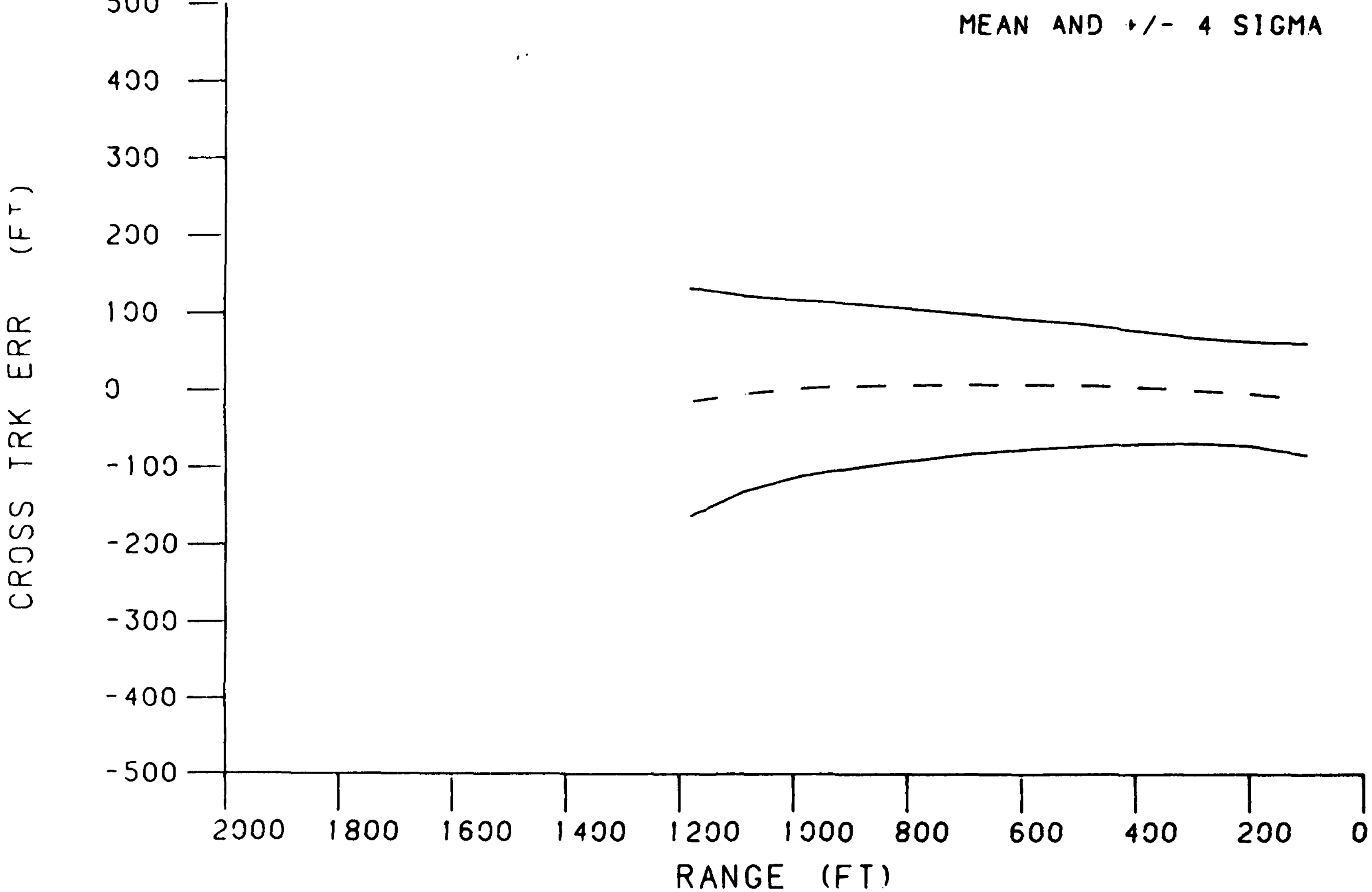
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 45 DEG , 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
500
400
300
200
100
0
-100
-200
-300
-400
-500
OSS TRK ERR (FT)
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)

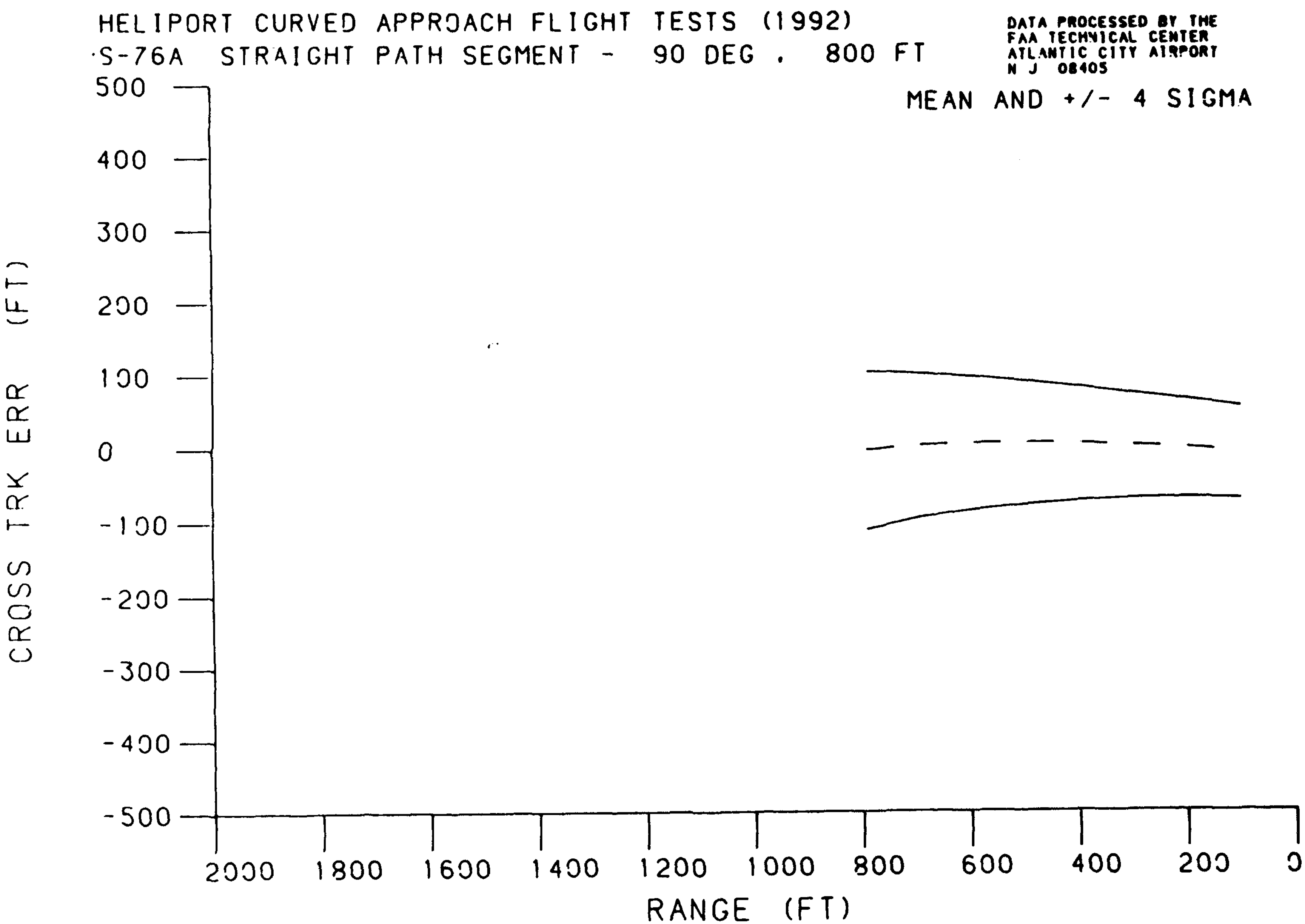

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 45 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
CROSS TRK ERR (FT)
500
400
300
200
100
0
-100
-200
-300
-400
-500
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)

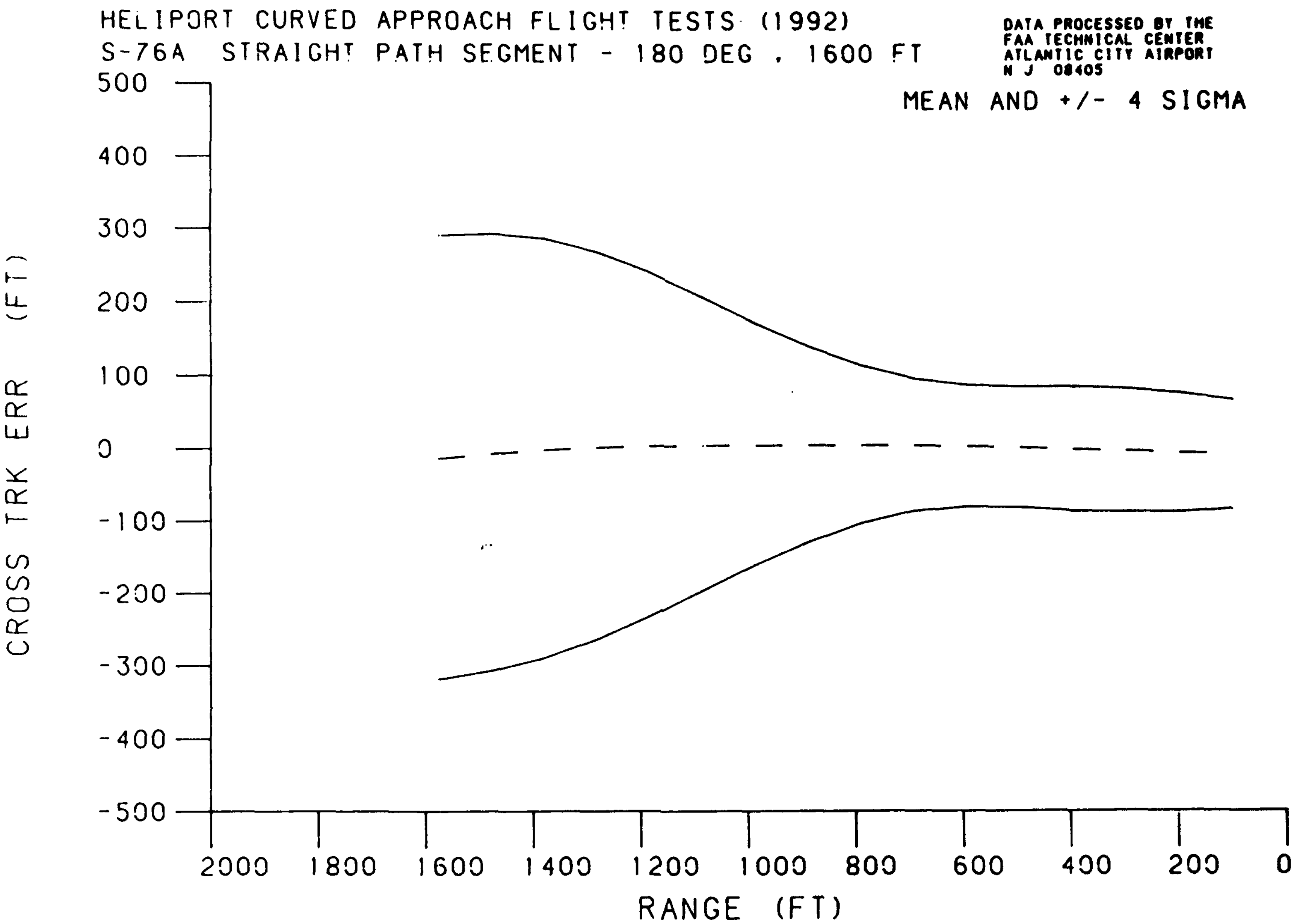

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 90 DEG , 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
500
400
300
200
100
0
-100
-200
-300
-400
-500
CROSS TRK ERR (FT)
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)

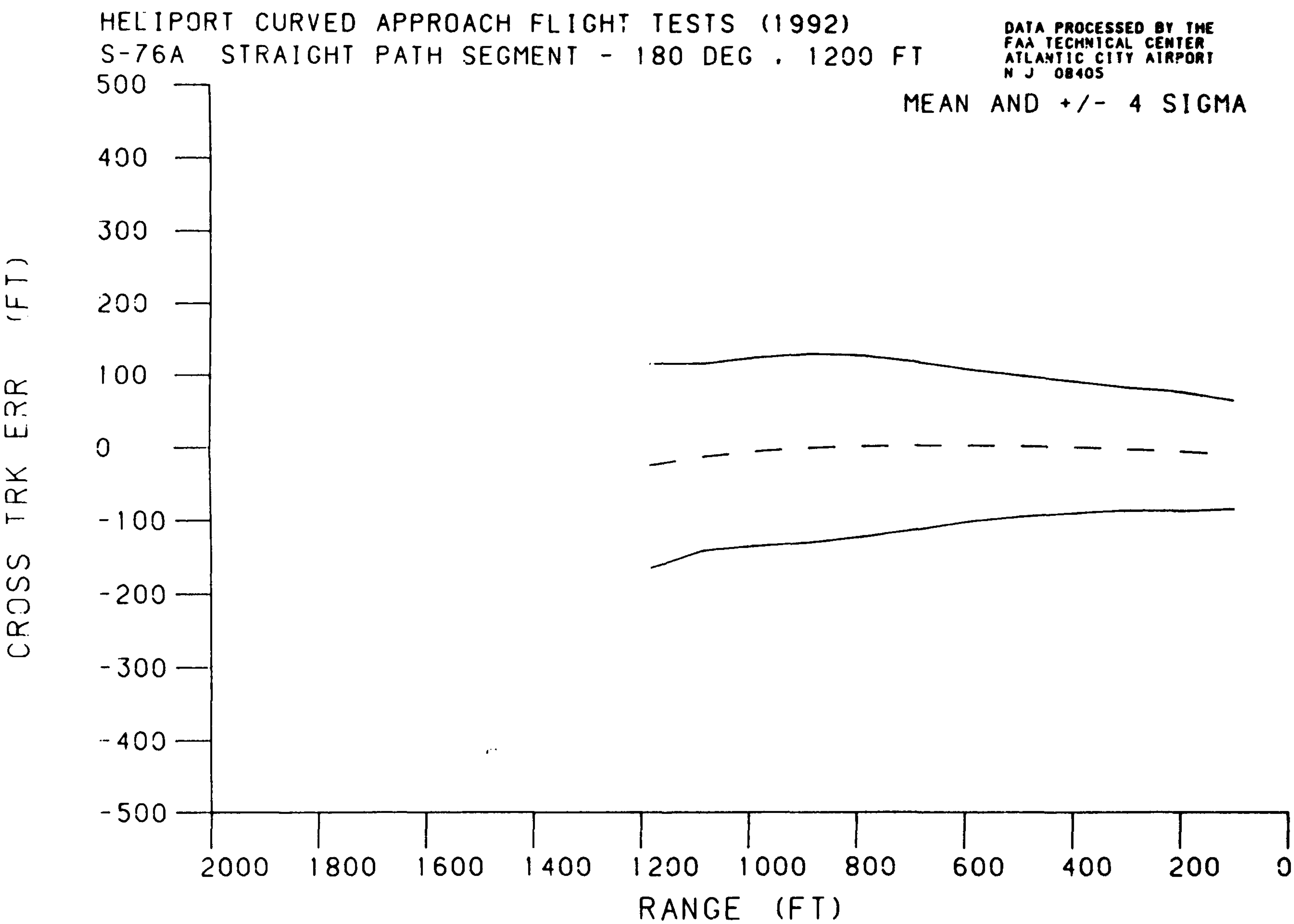
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 90 DEG , 1200 FT

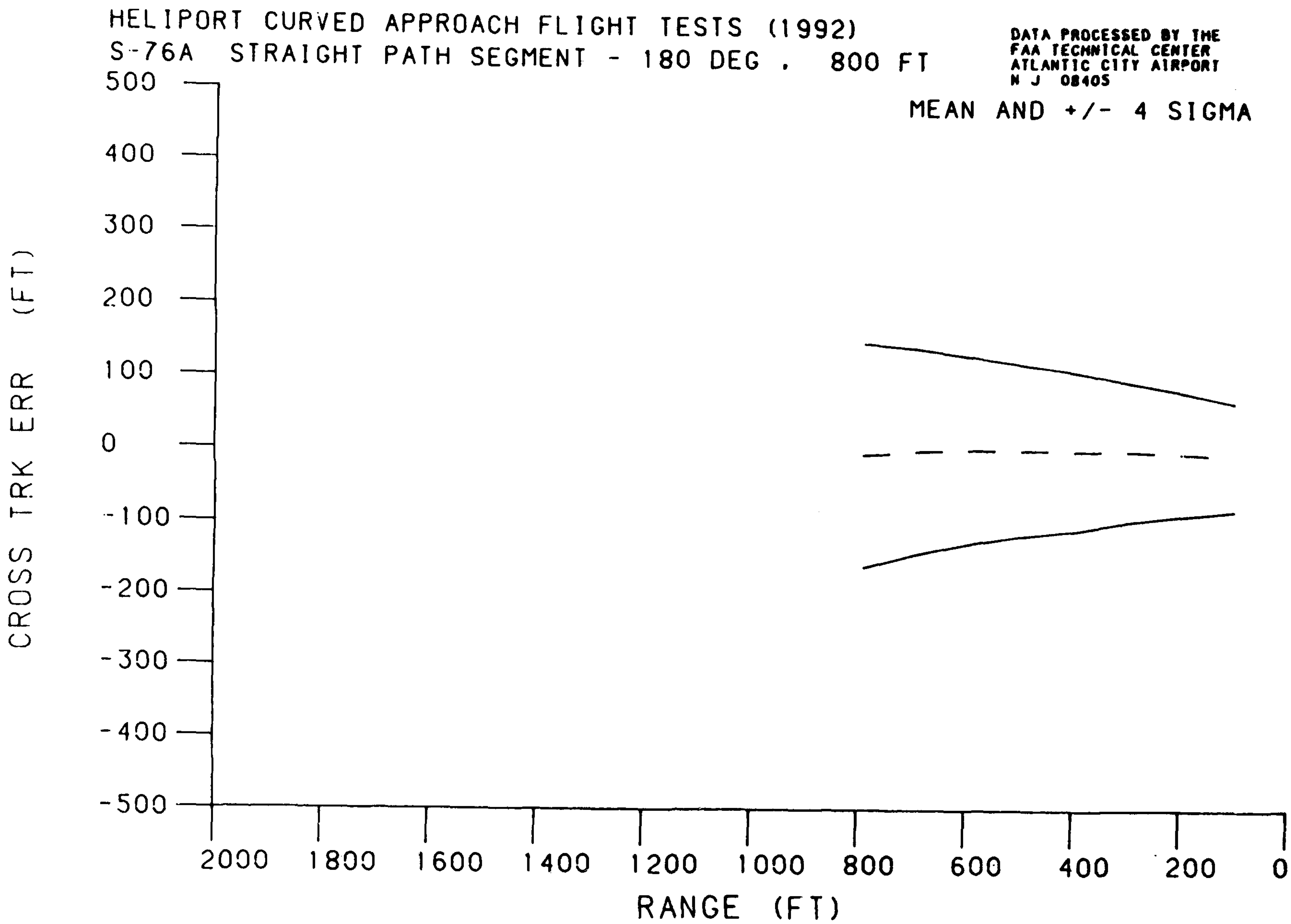
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405




HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 90 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
CROSS TRK ERR (FT)
500
400
300
200
100
0
-100
-200
-300
-400
-500
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)

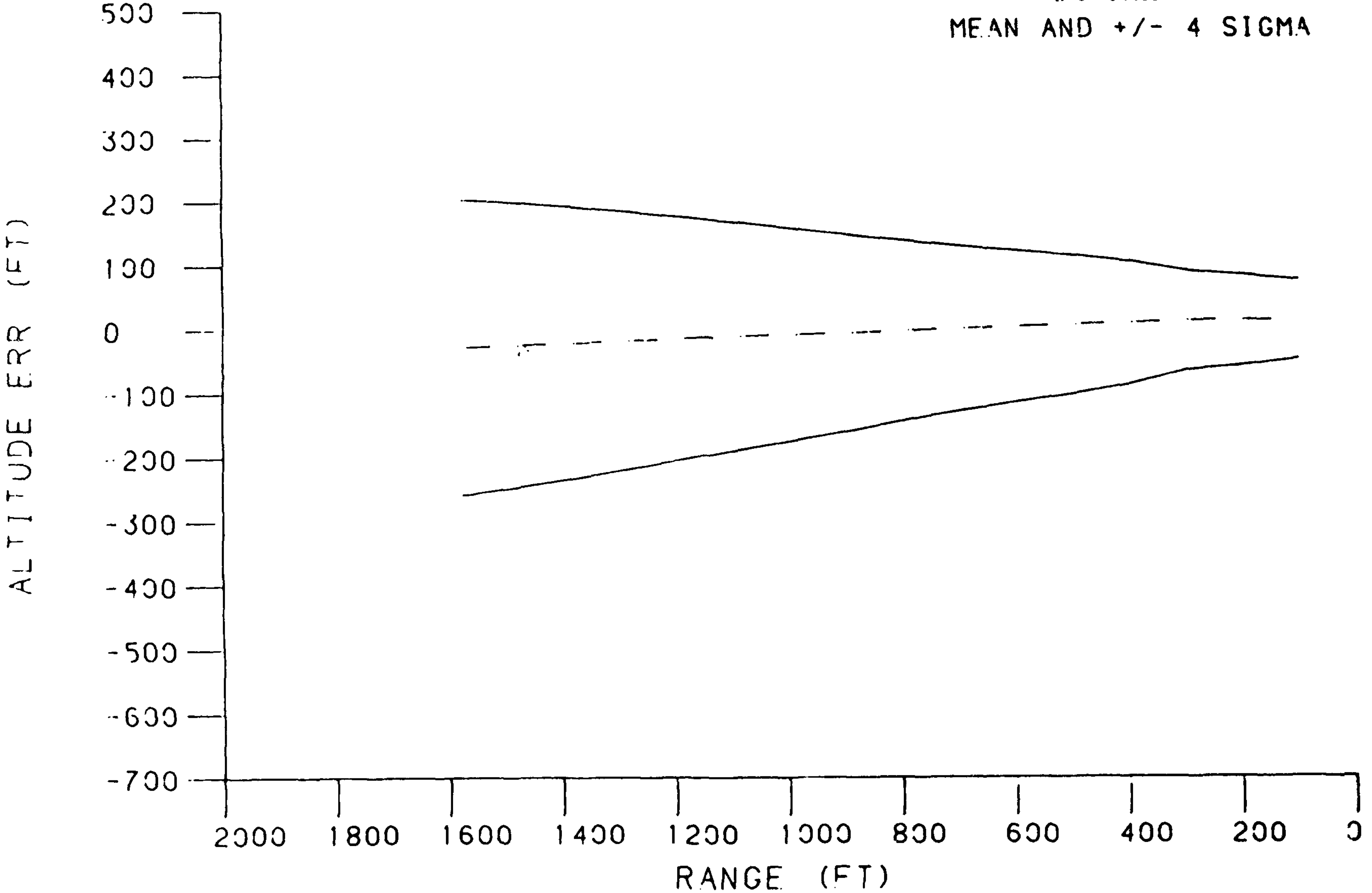

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 180 DEG , 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
CROSS TRK ERR (FT)
500
400
300
200
100
0
-100
-200
-300
-400
-500
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 180 DEG , 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
500
400
300
200
100
0
-100
-200
-300
-400
-500
CROSS TRK ERR (FT)
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 180 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
500
400
300
200
100
0
-100
-200
-300
-400
-500
CROSS TRK ERR (FT)
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)

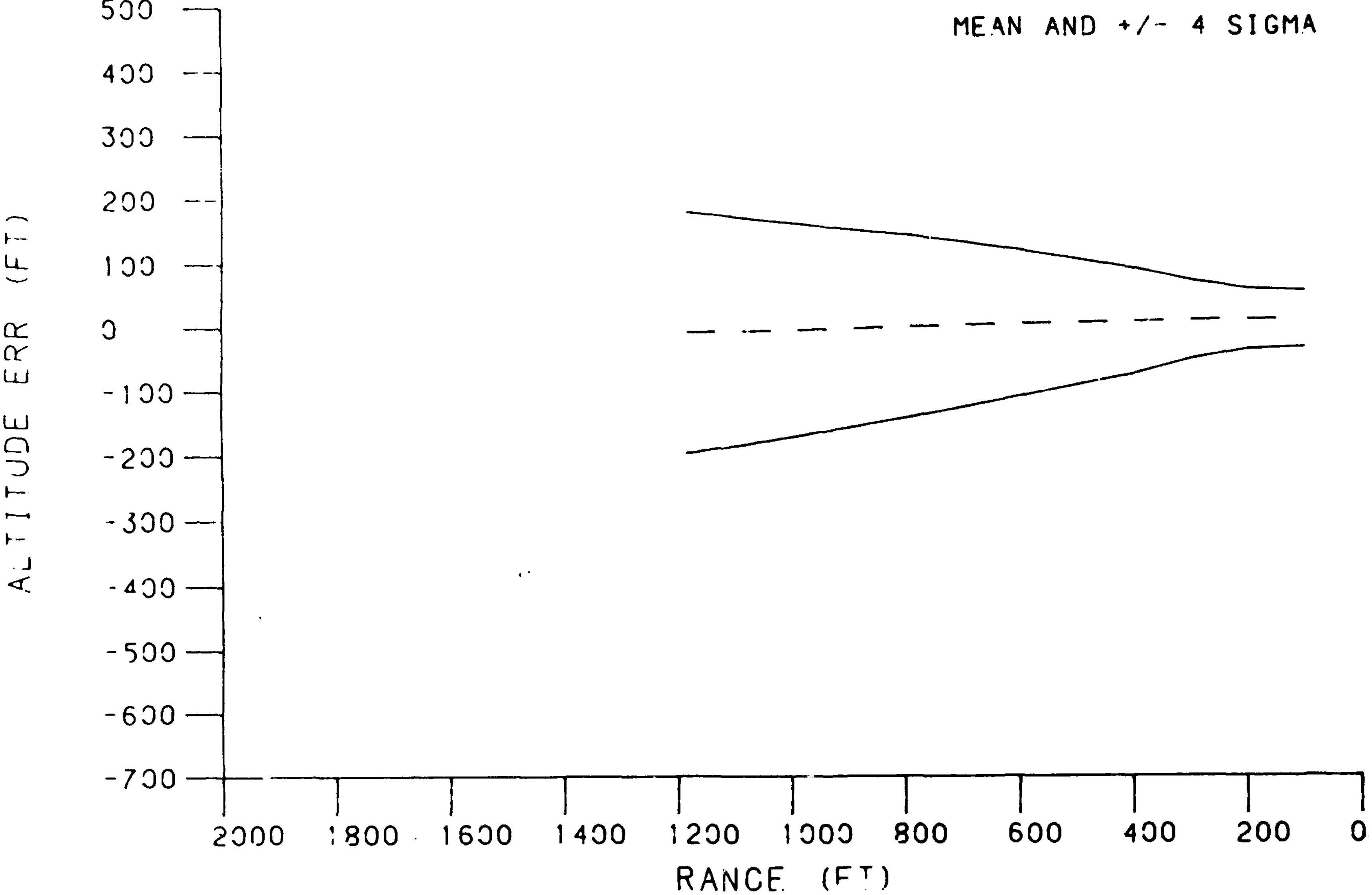
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 45 DEG , 1600 FT

DATA PROCESSED BY THE FAA TECHNICAL CENTER ATLANTIC CITY AIRPORT N J 08405

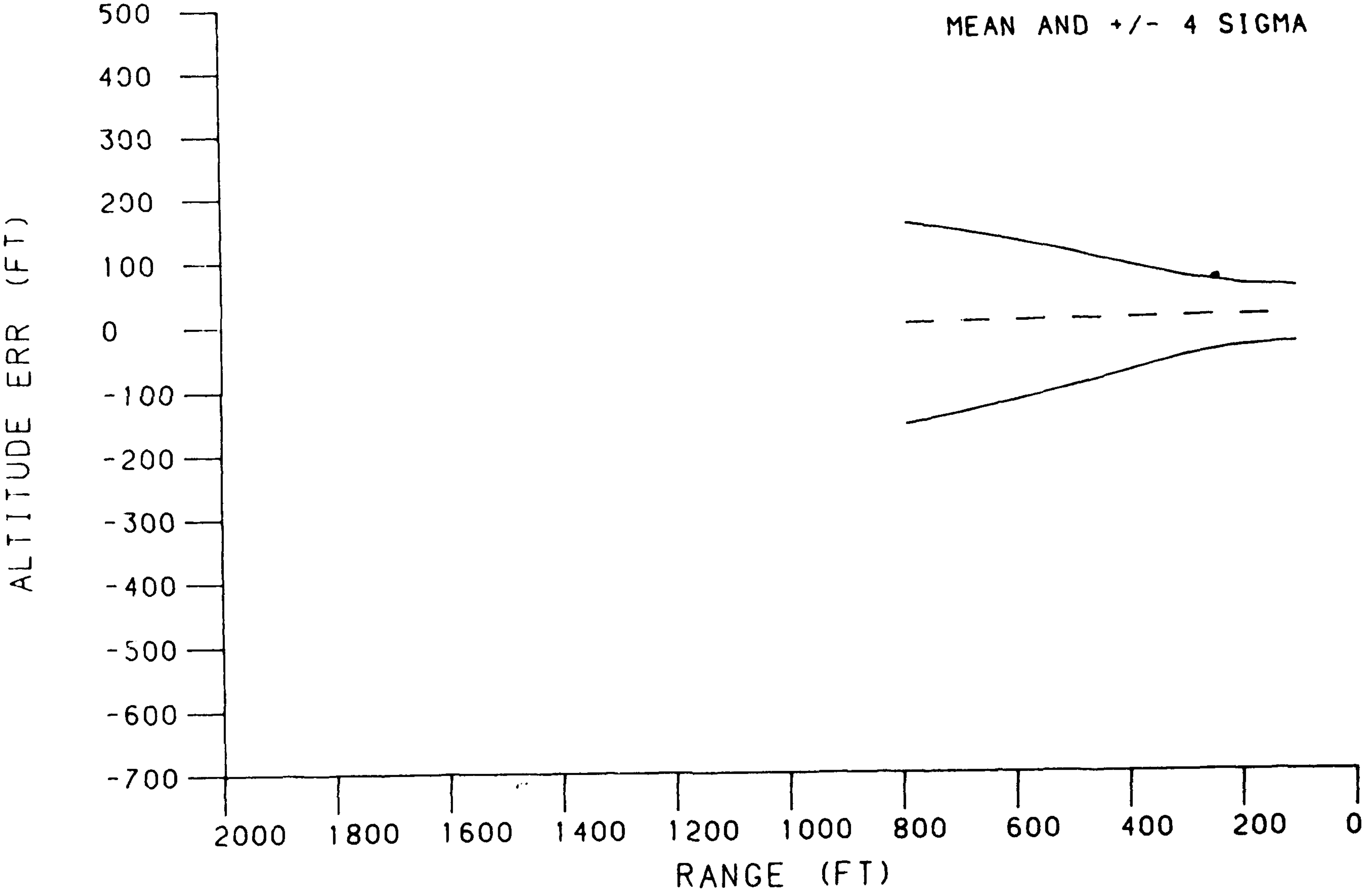


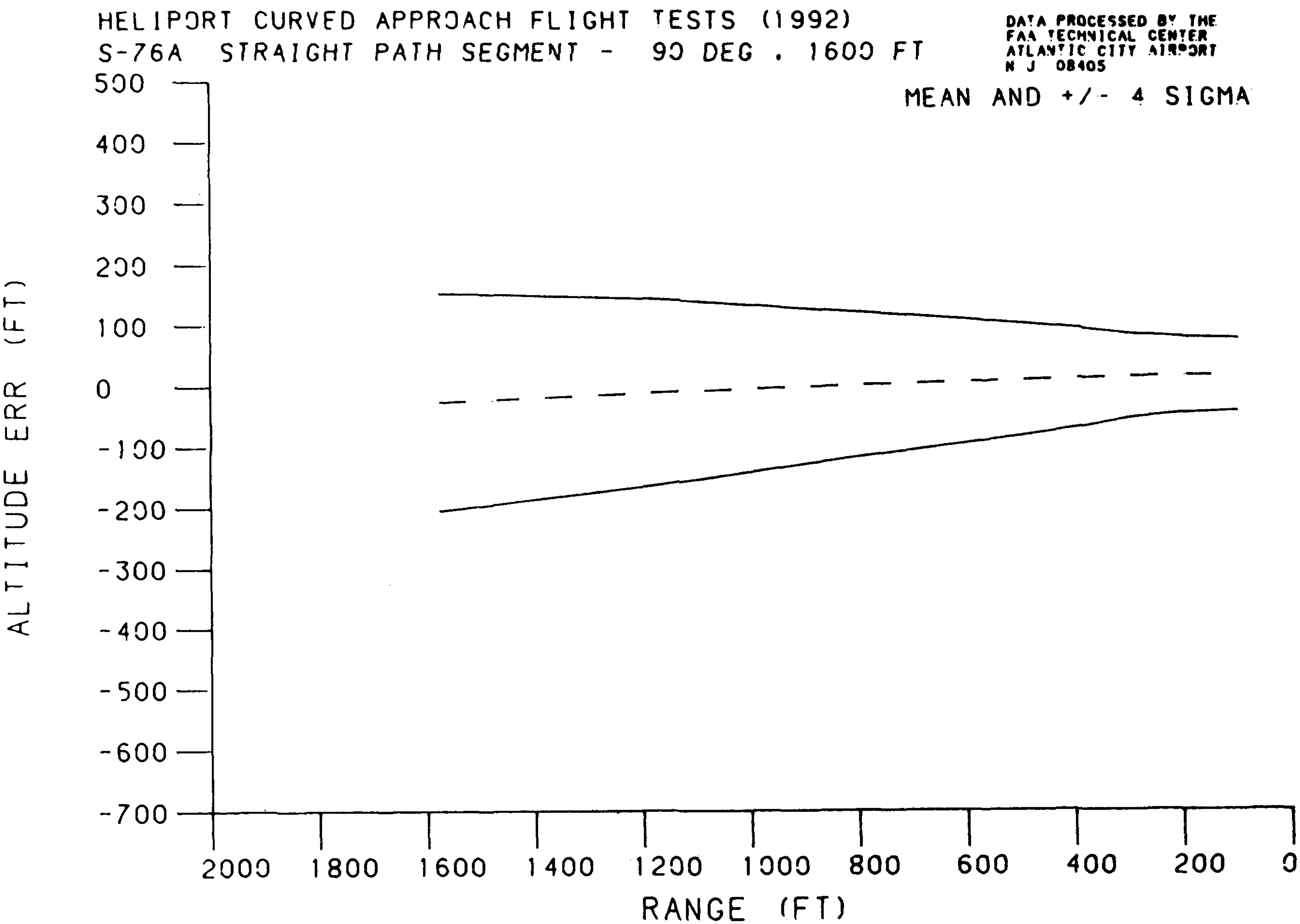
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 45 DEG , 1200 FT

DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405



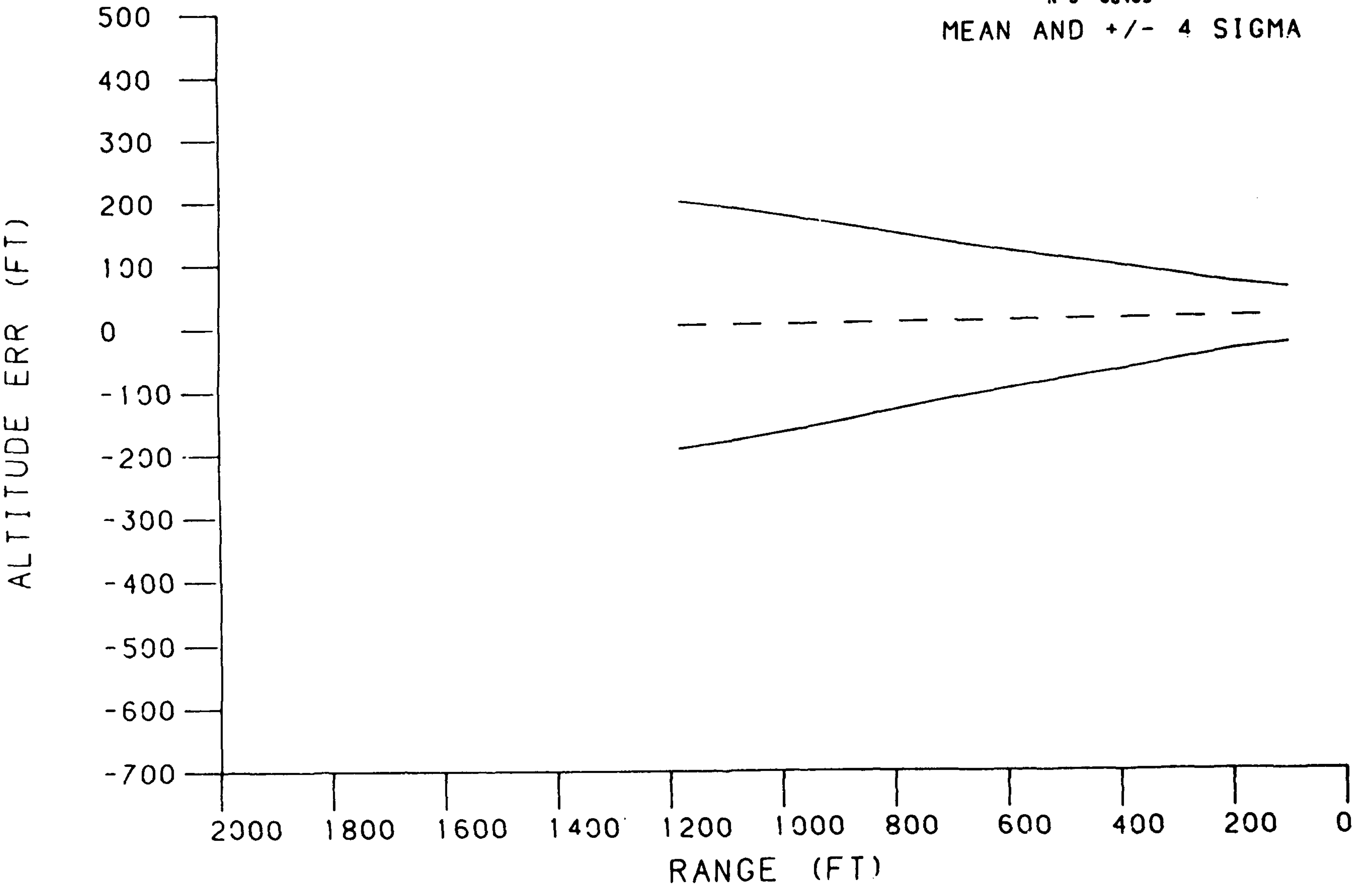
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 45 DEG , 800 FT

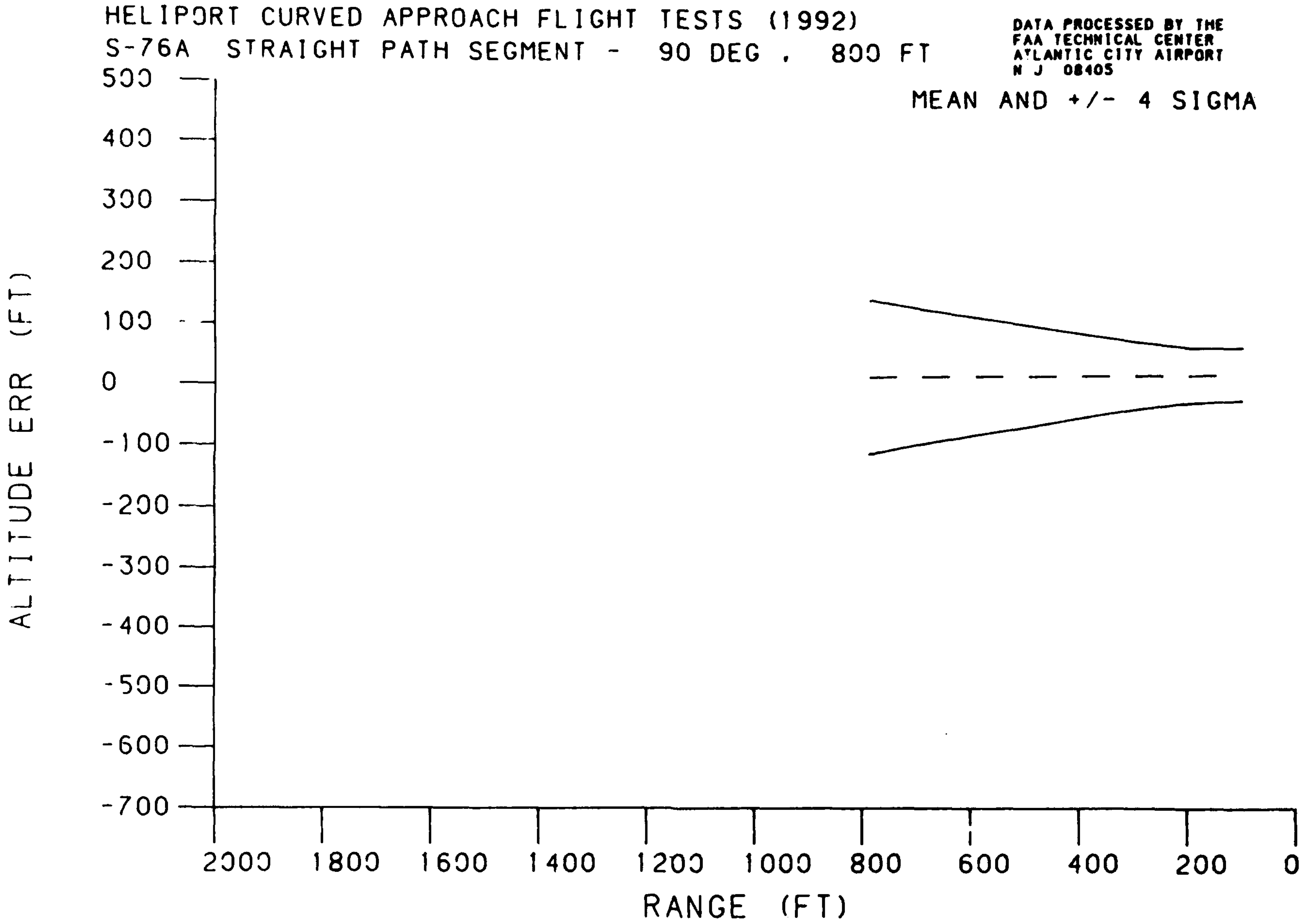




HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 90 DEG , 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
500
400
300
200
100
0
-100
-200
-300
-400
-500
-600
-700
ALTITUDE ERR (FT)
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)

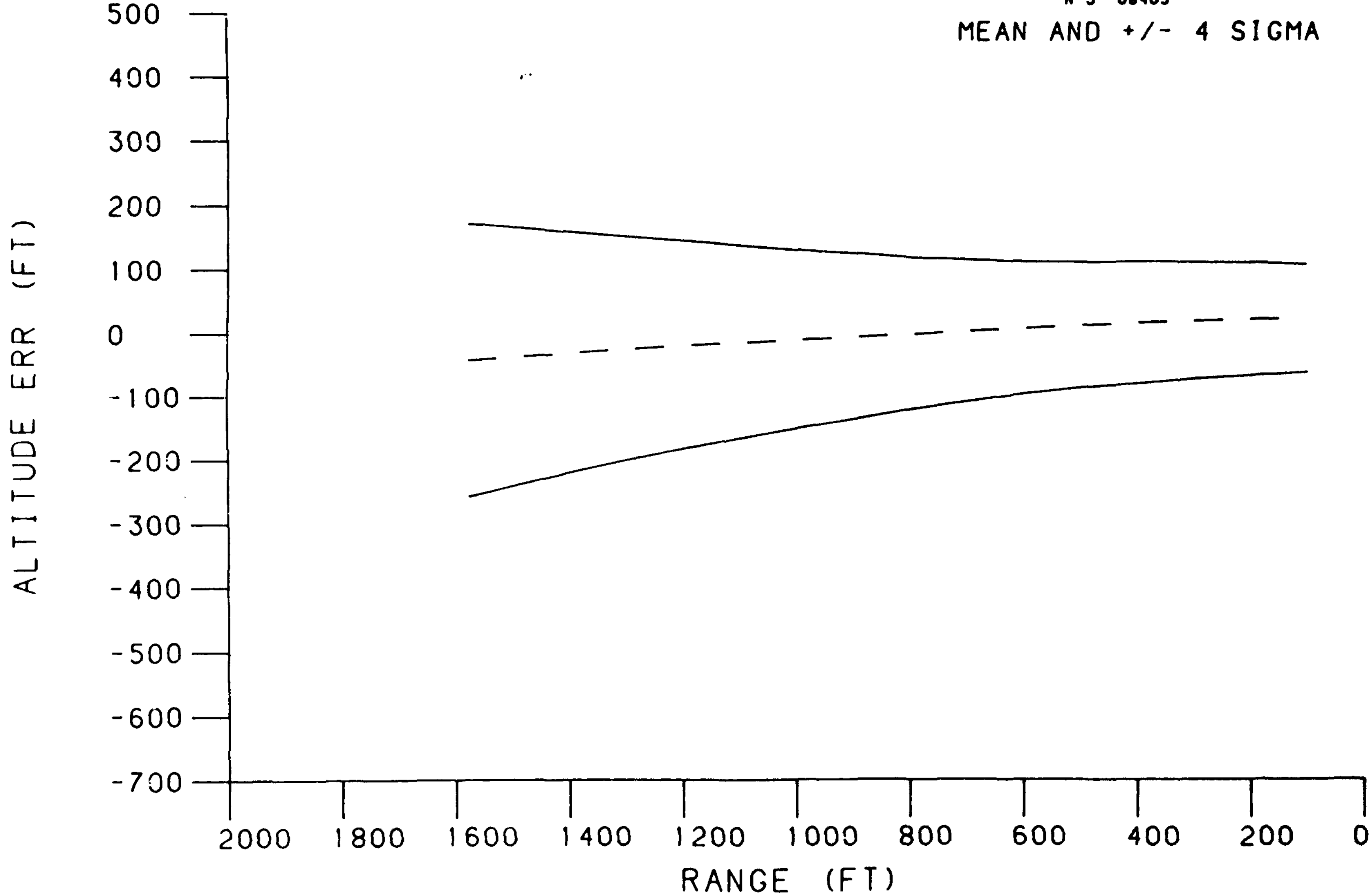
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 90 DEG , 1200 FT




HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 90 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 4 SIGMA
ALTITUDE ERR (FT)
500
400
300
200
100
0
-100
-200
-300
-400
-500
-600
-700
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)

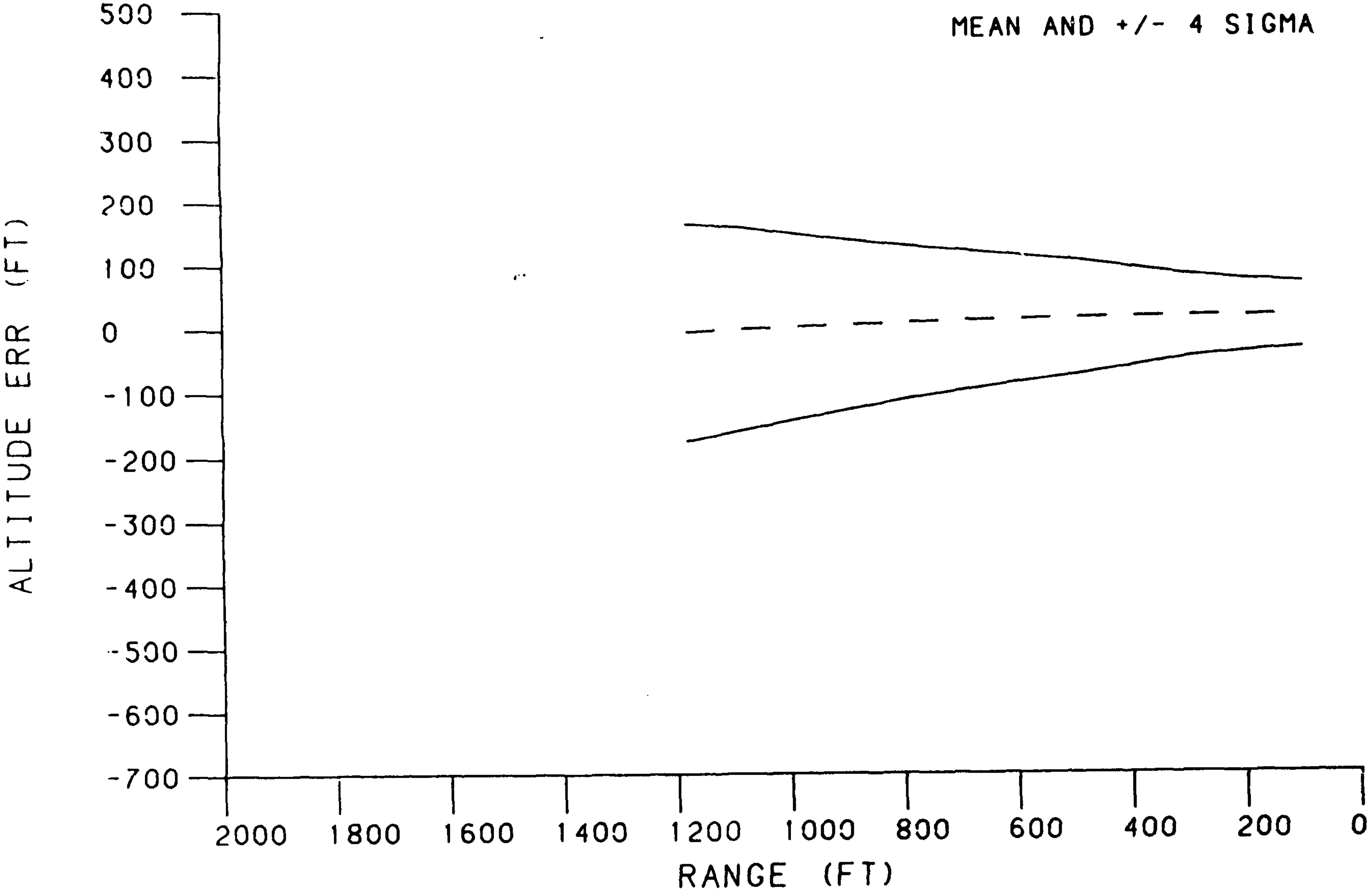
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 180 DEG . 1600 FT

DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405



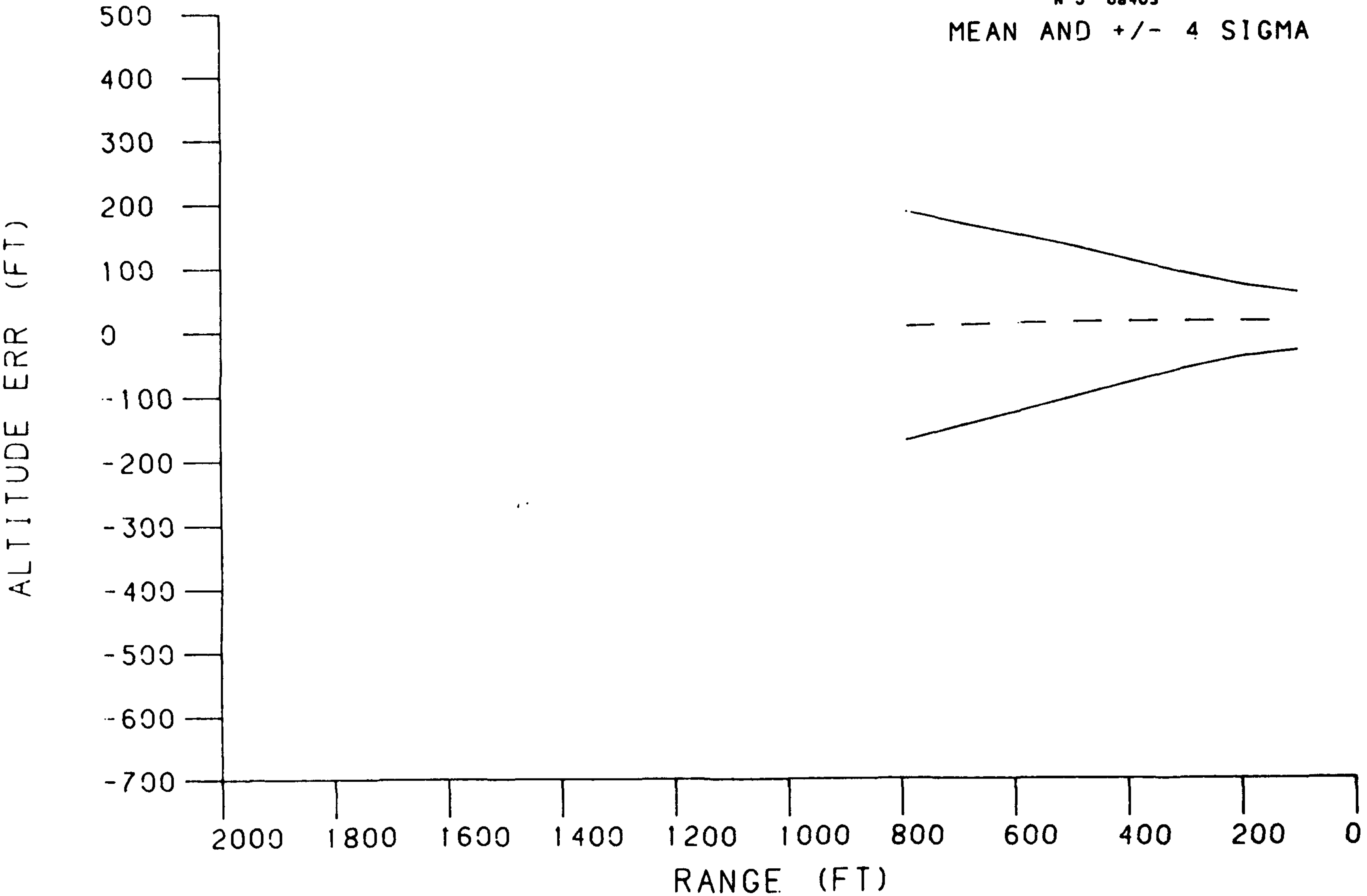
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 180 DEG, 1200 FT

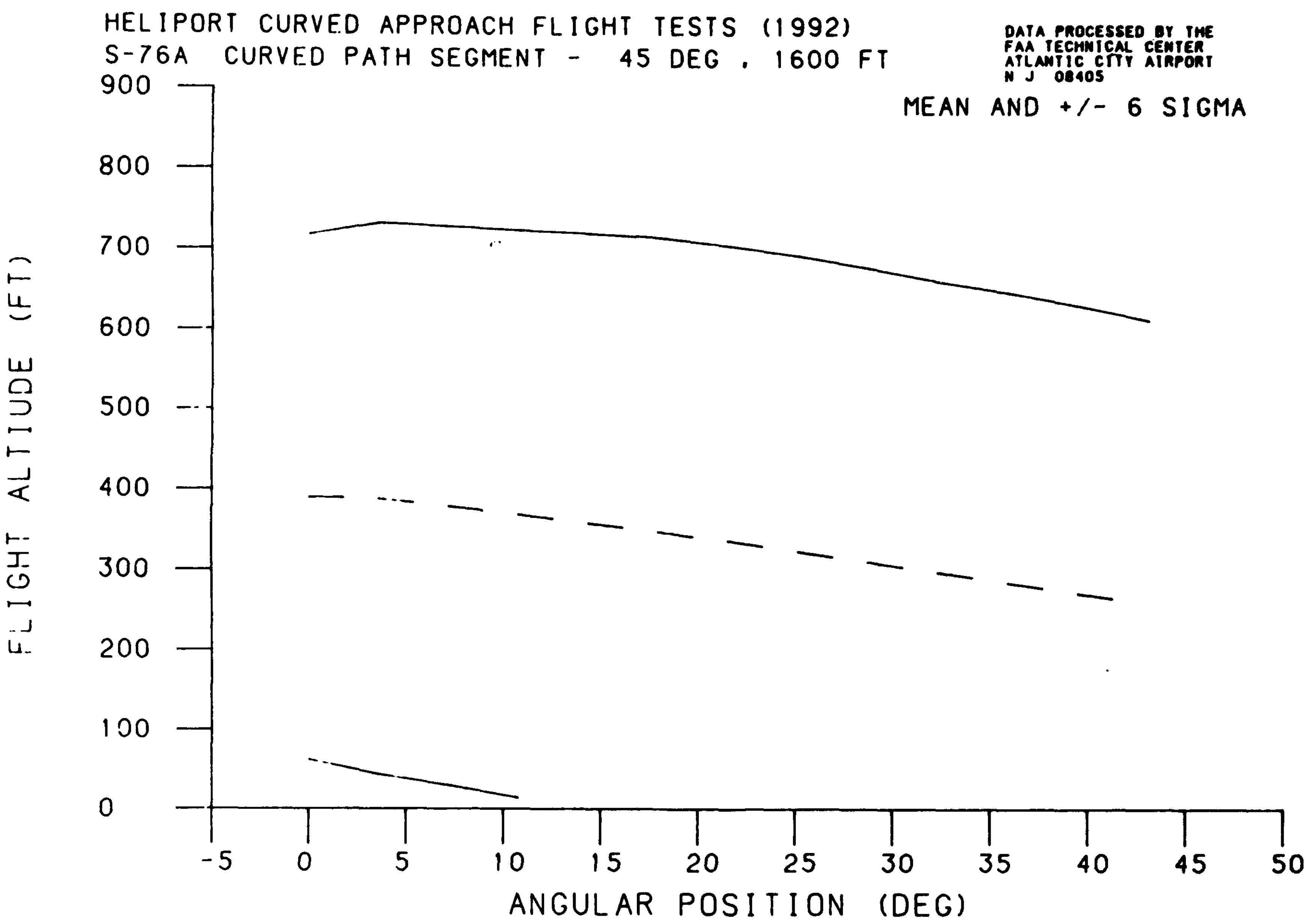
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405



HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 180 DEG , 800 FT

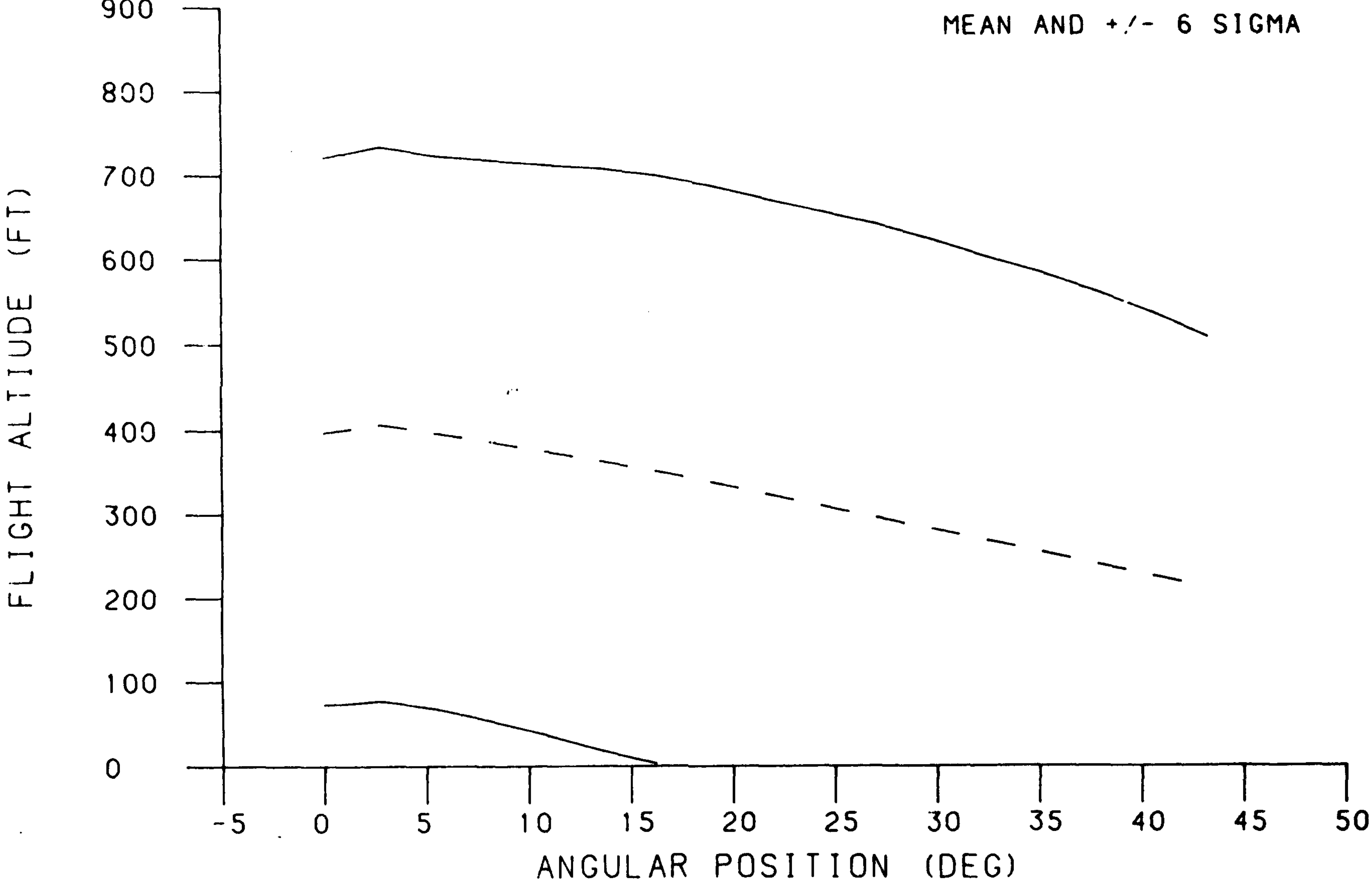
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405

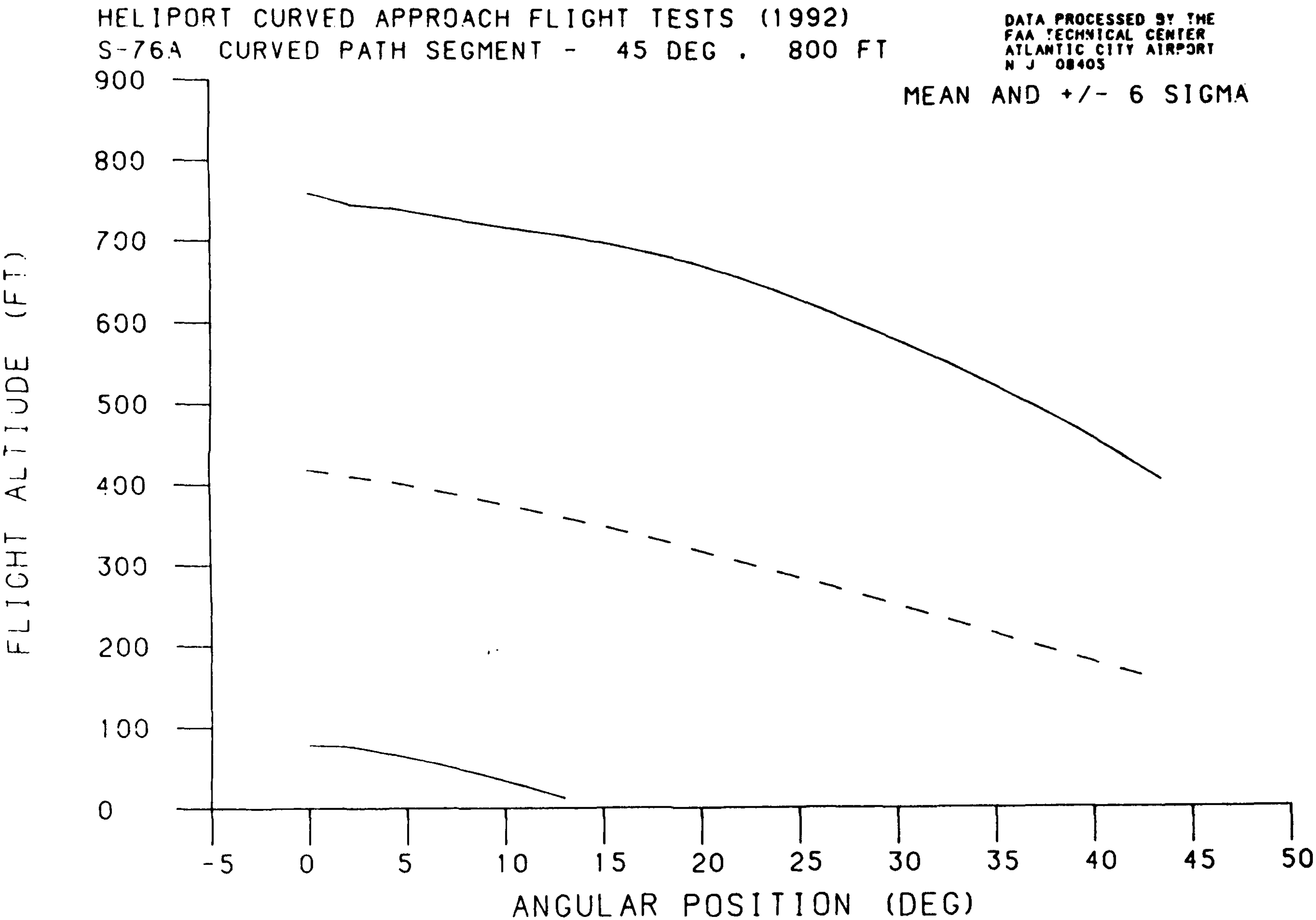



HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG , 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
900
800
700
600
500
400
300
200
100
0
FLIGHT ALTITUDE (FT)
-5
0
5
10
15
20
25
30
35
40
45
50
ANGULAR POSITION (DEG)

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG , 1200 FT

DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405



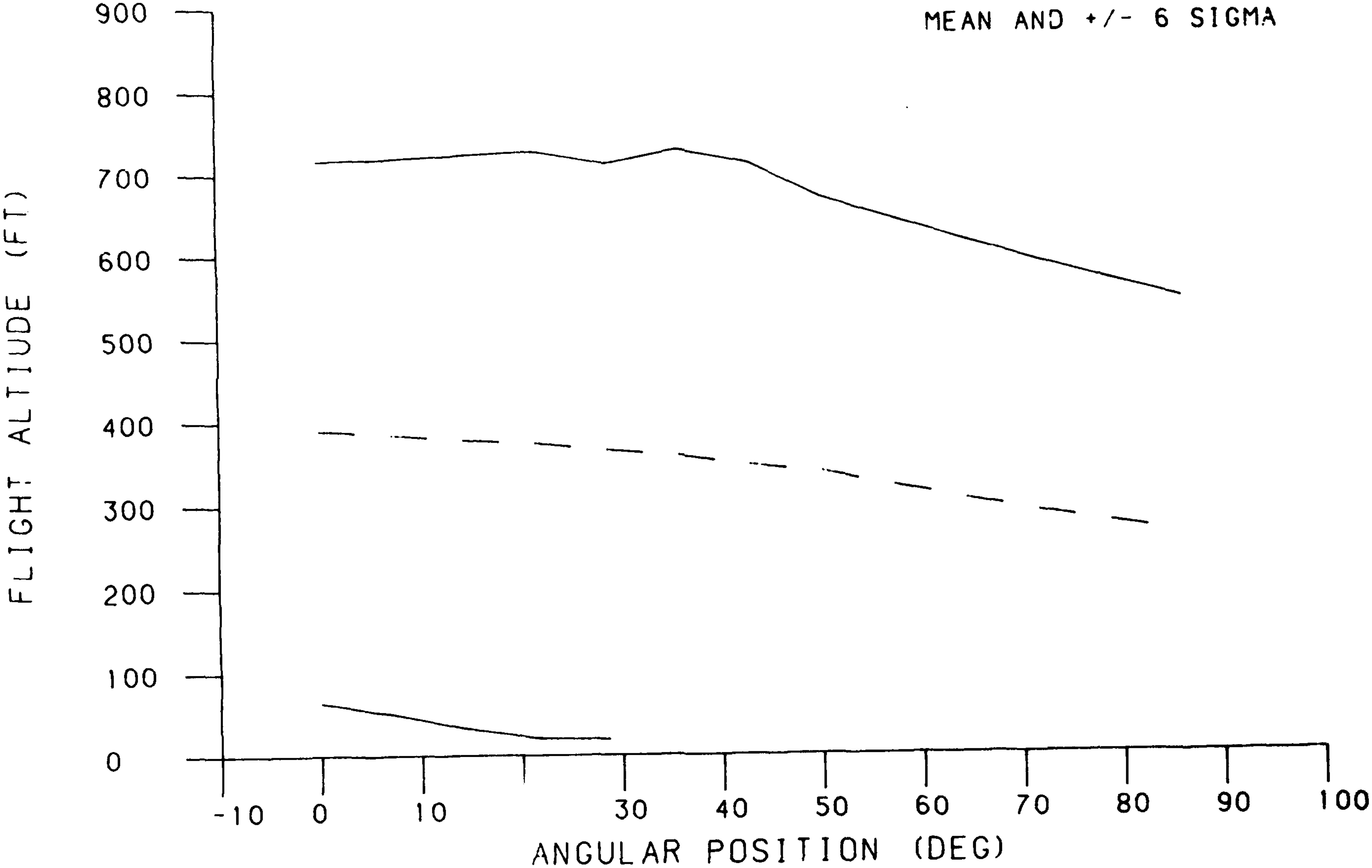


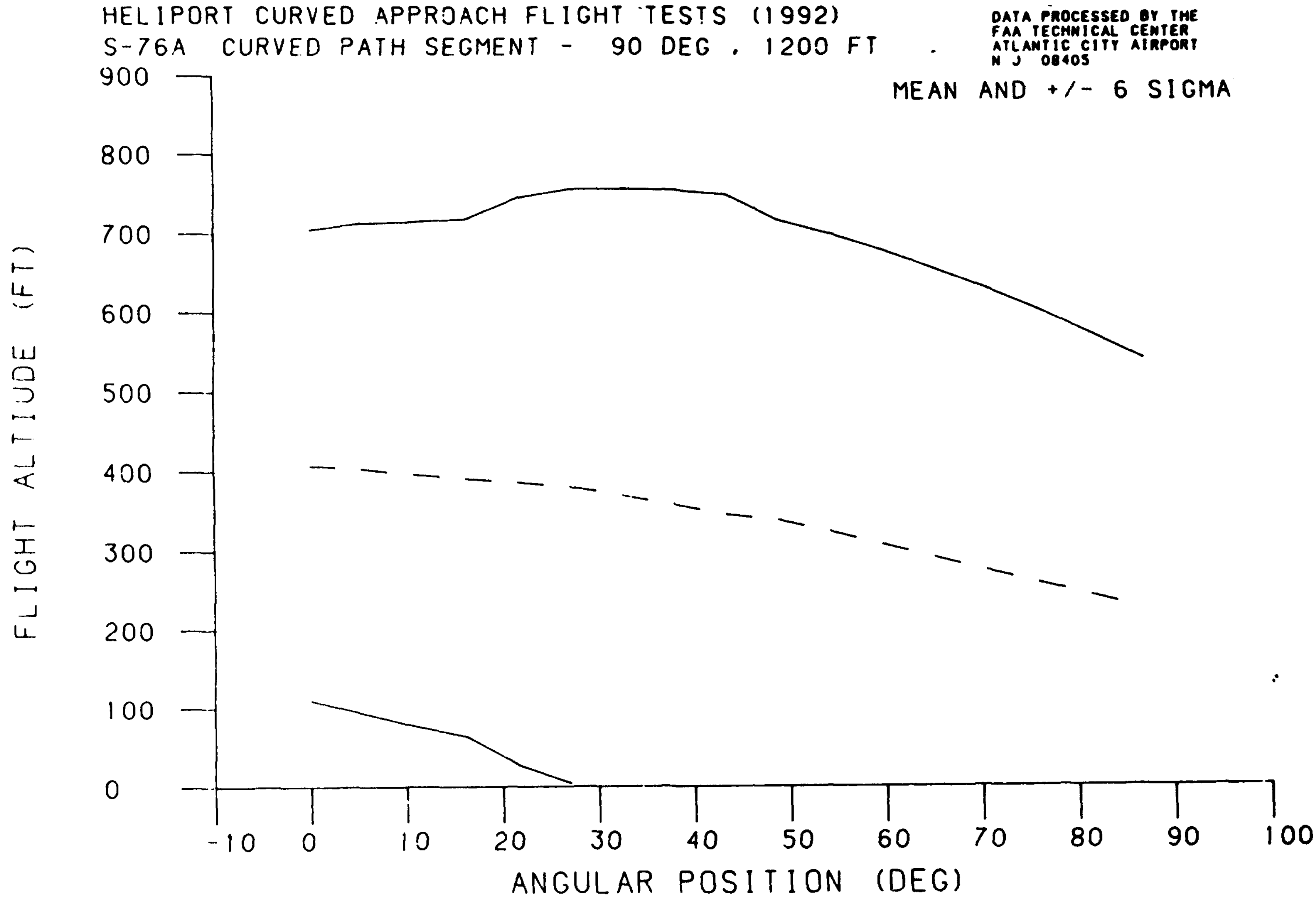
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
FLIGHT ALTITUDE (FT)
900
800
700
600
500
400
300
200
100
0
-5
0
5
10
15
20
25
30
35
40
45
50
ANGULAR POSITION (DEG)

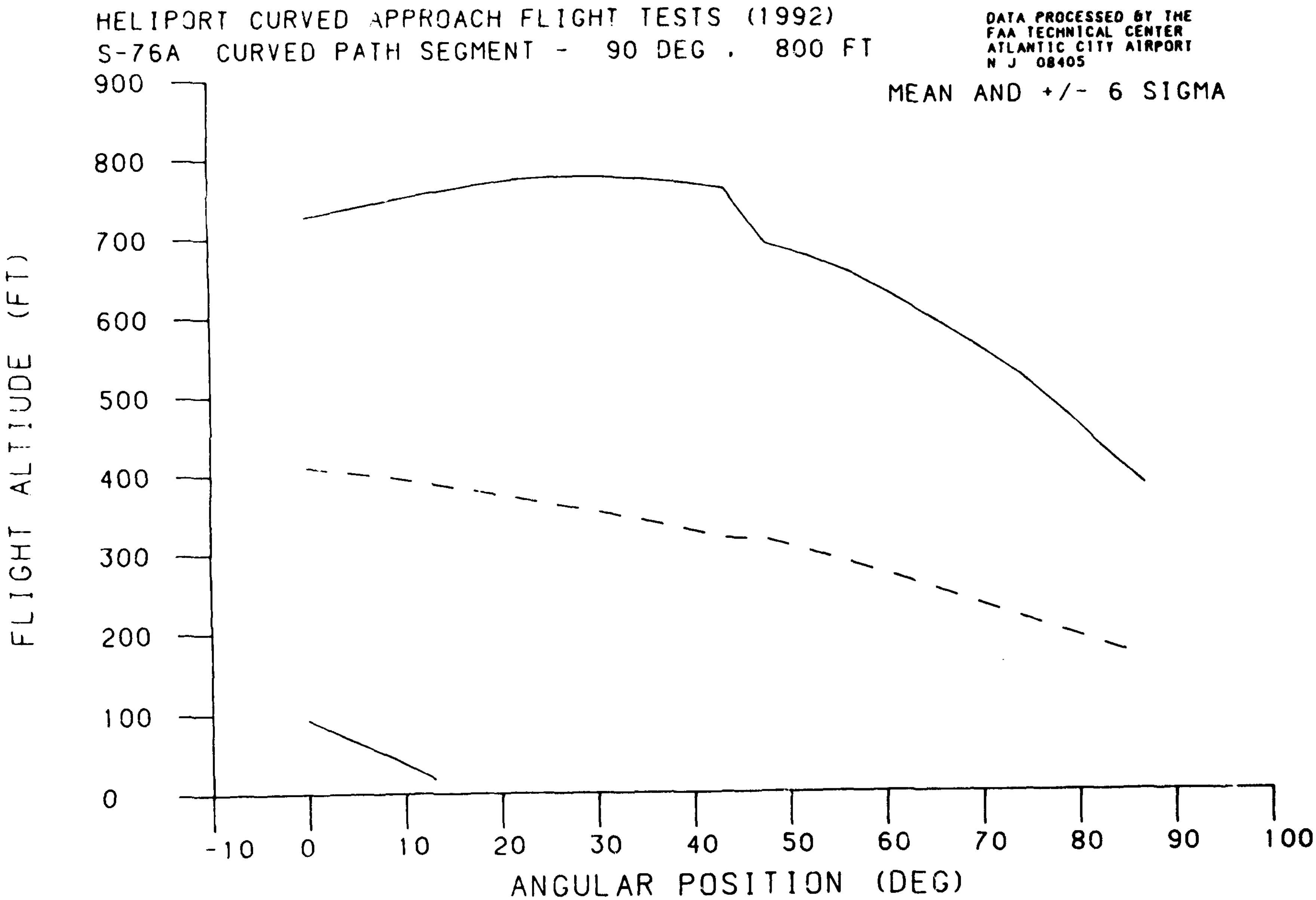
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG , 1600 FT

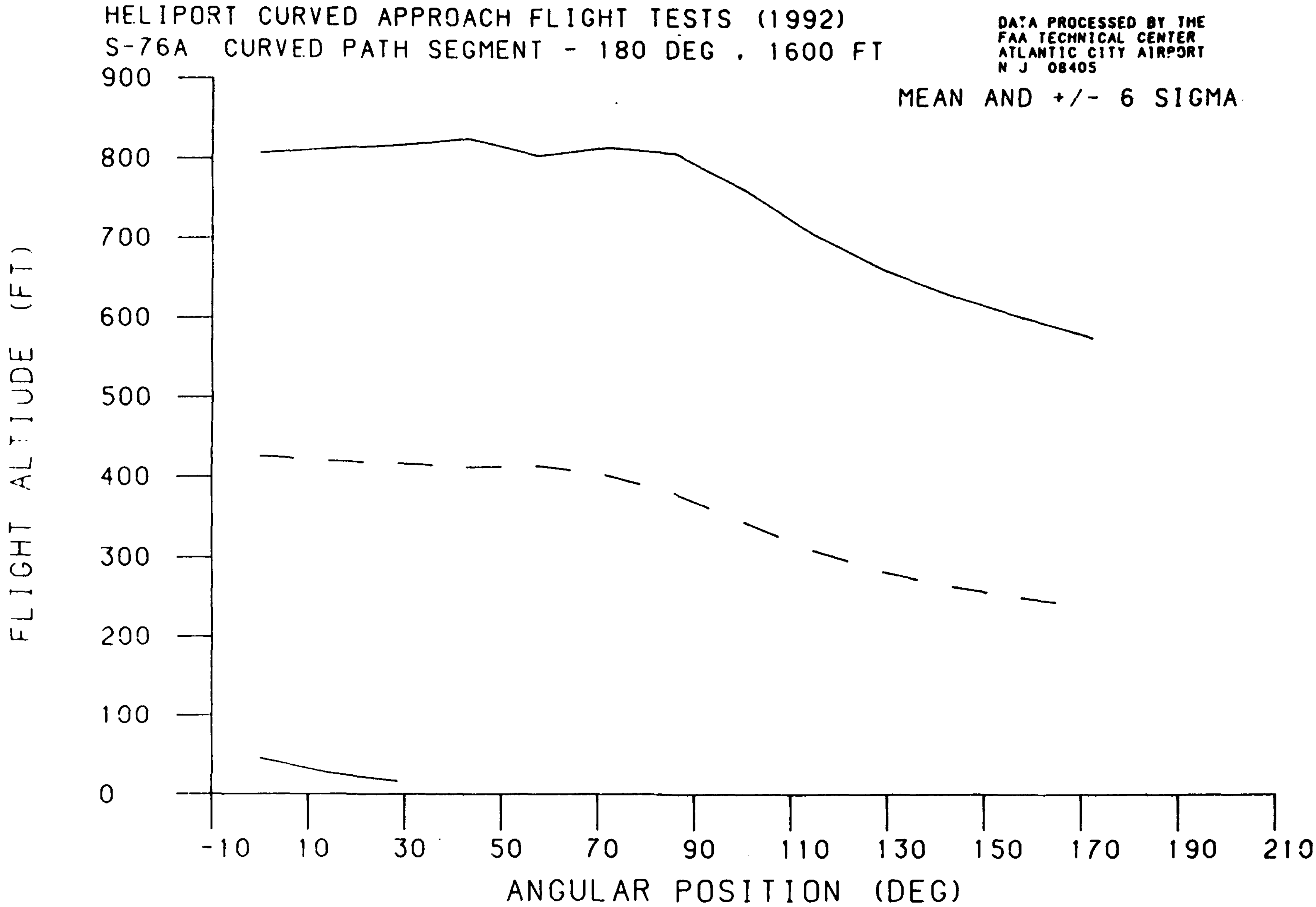
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405

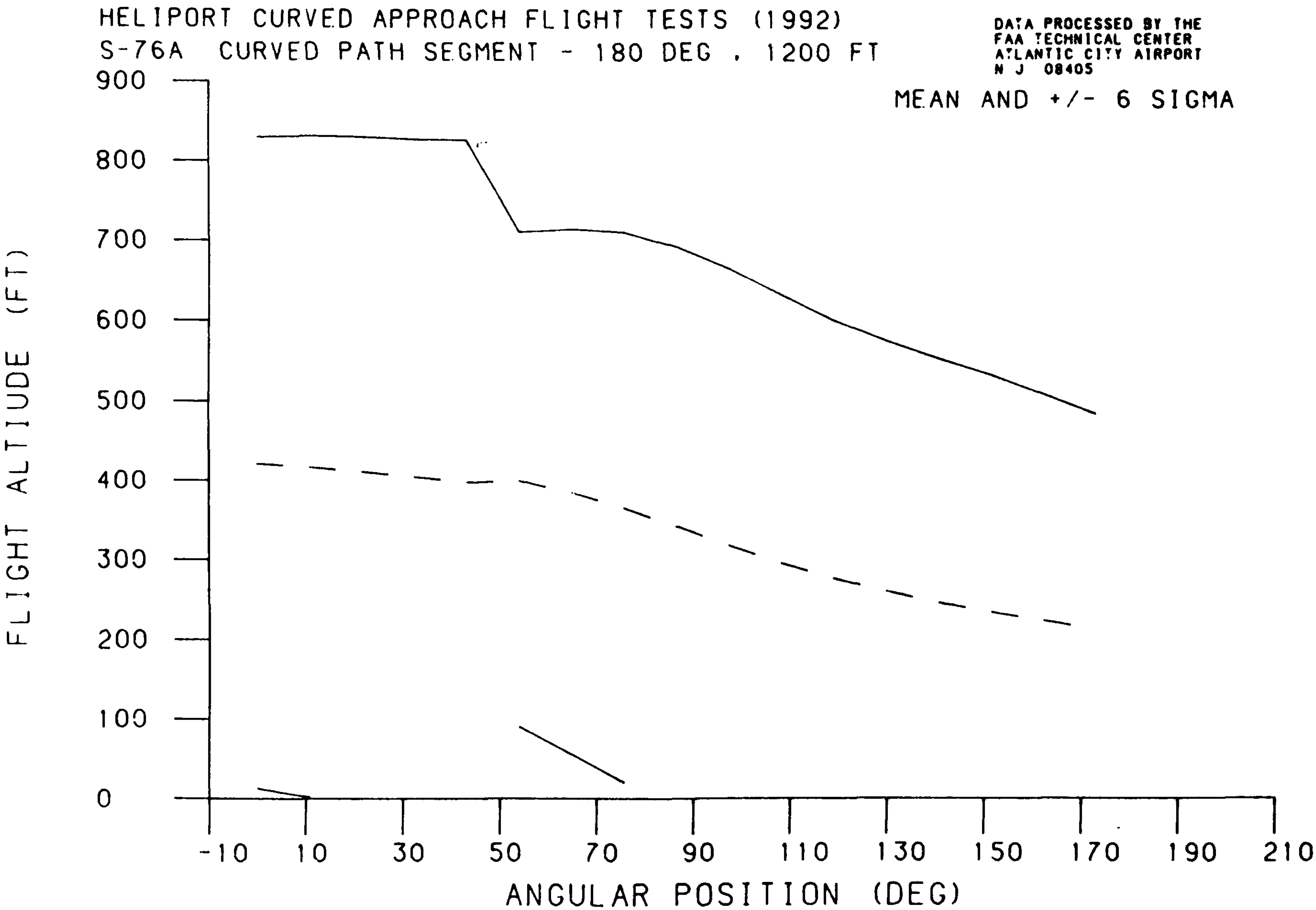
MEAN AND +/- 6 SIGMA




HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG , 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
FLIGHT ALTIUDE (FT)
900
800
700
600
500
400
300
200
100
0
-10
0
10
20
30
40
50
60
70
80
90
100
ANGULAR POSITION (DEG)

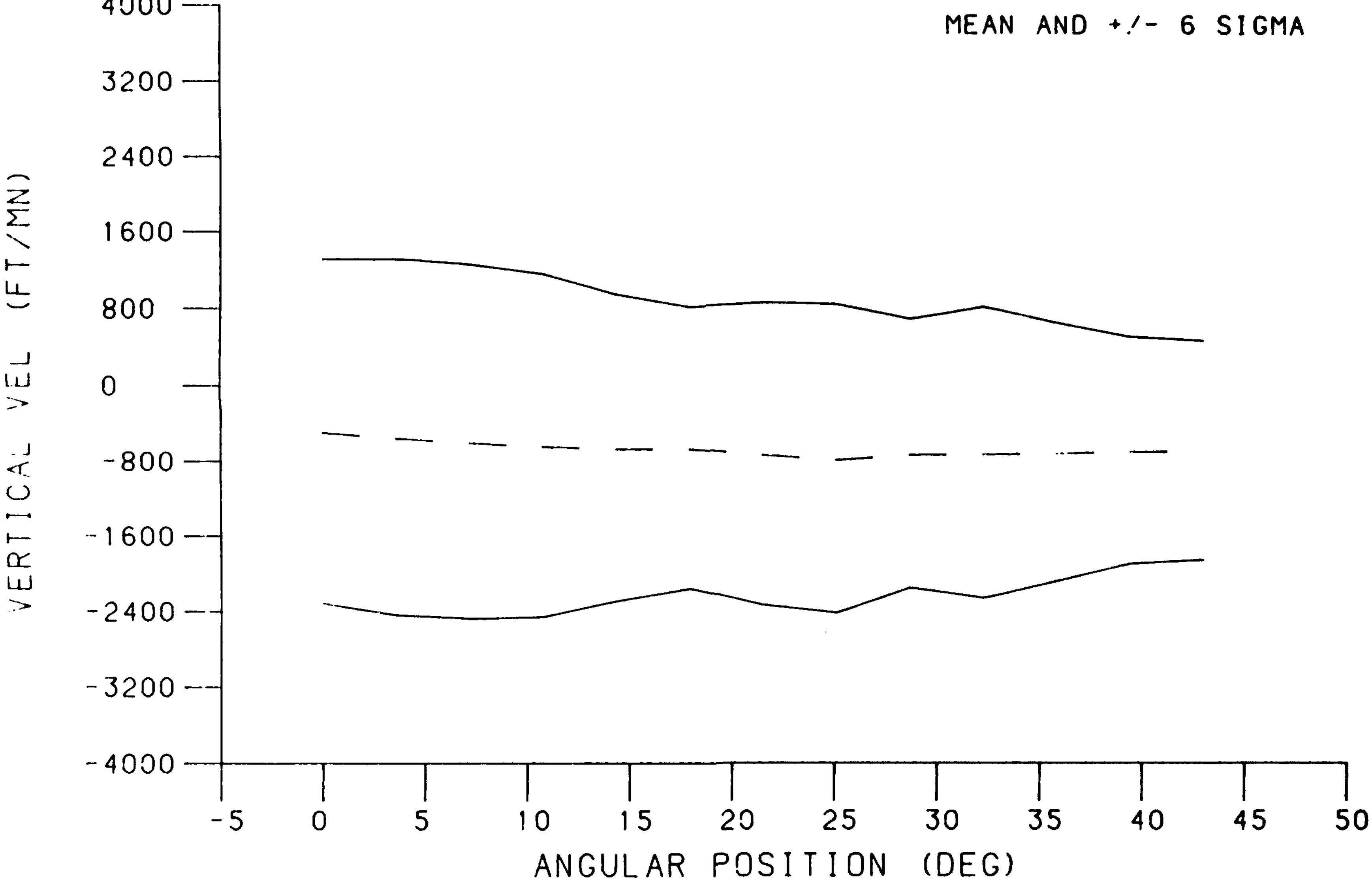

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
FLIGHT ALTITUDE (FT)
0
100
200
300
400
500
600
700
800
900
-10
0
10
20
30
40
50
60
70
80
90
100
ANGULAR POSITION (DEG)

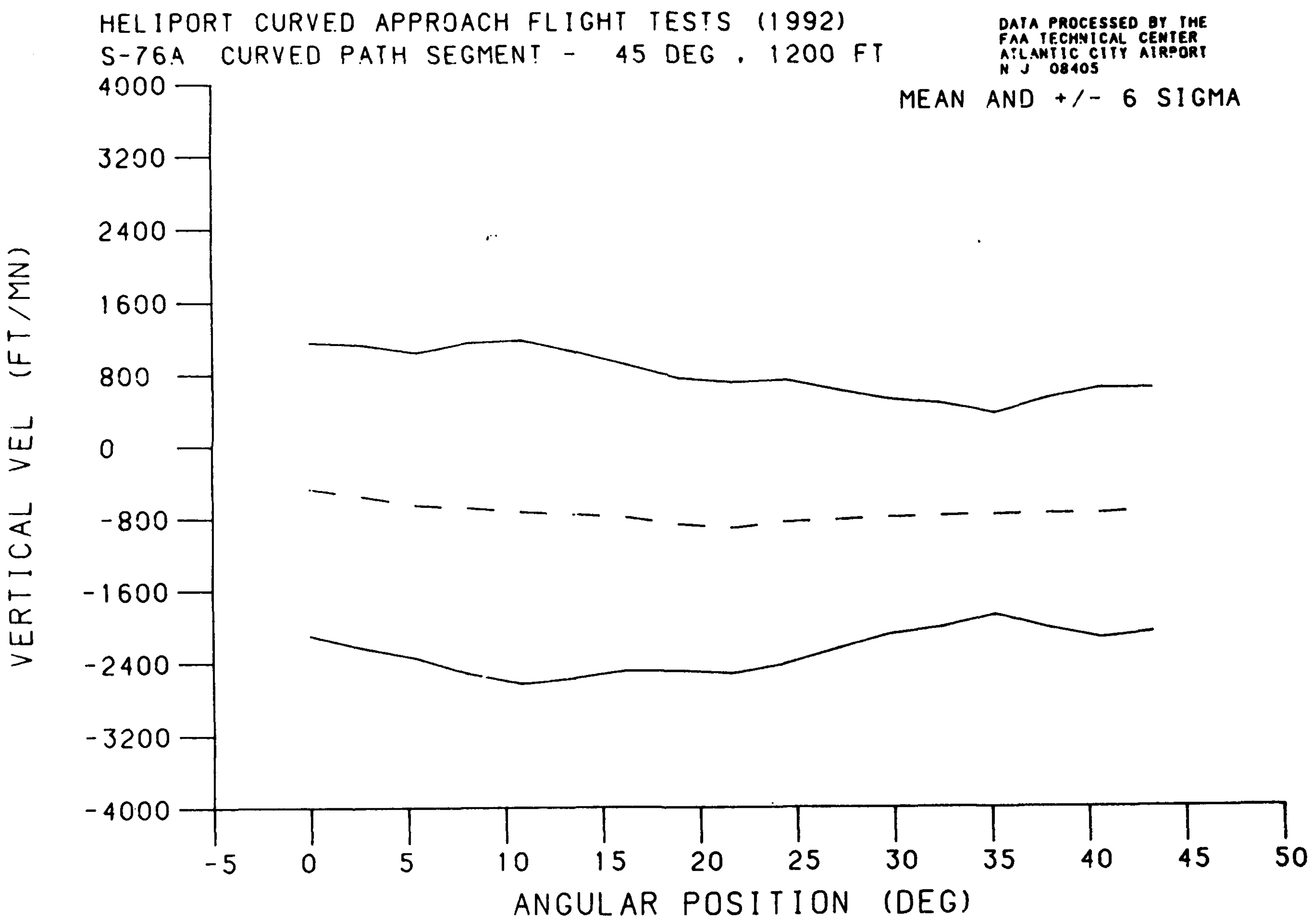

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG , 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
FLIGHT ALTITUDE (FT)
900
800
700
600
500
400
300
200
100
0
-10
10
30
50
70
90
110
130
150
170
190
210
ANGULAR POSITION (DEG)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG . 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
FLIGHT ALTITUDE (FT)
900
800
700
600
500
400
300
200
100
0
-10
10
30
50
70
90
110
130
150
170
190
210
ANGULAR POSITION (DEG)

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG , 1600 FT

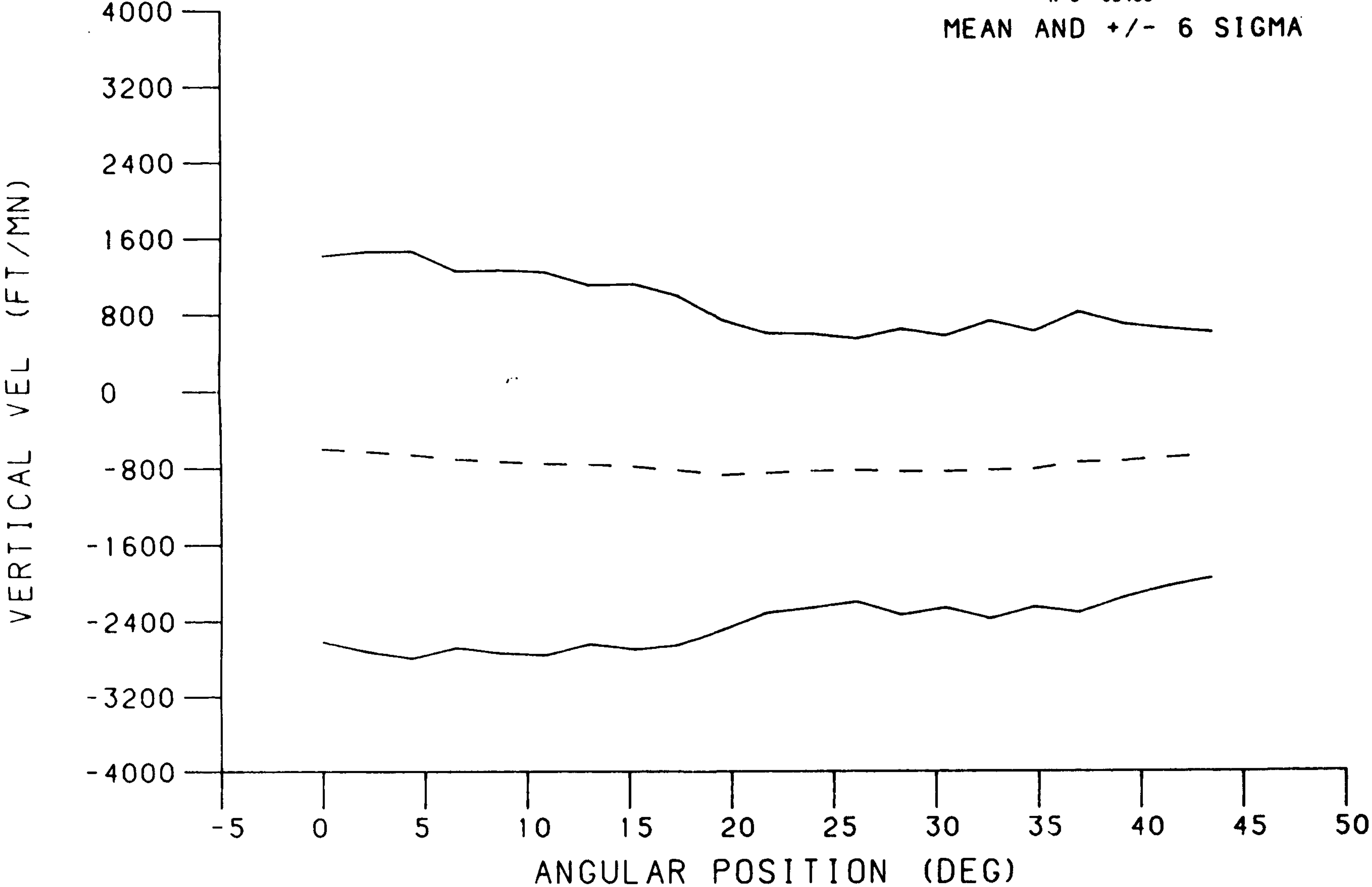
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405




HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG , 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
4000
3200
2400
1600
800
0
-800
-1600
-2400
-3200
-4000
VERTICAL VEL (FT/MN)
-5
0
5
10
15
20
25
30
35
40
45
50
ANGULAR POSITION (DEG)

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG , 800 FT

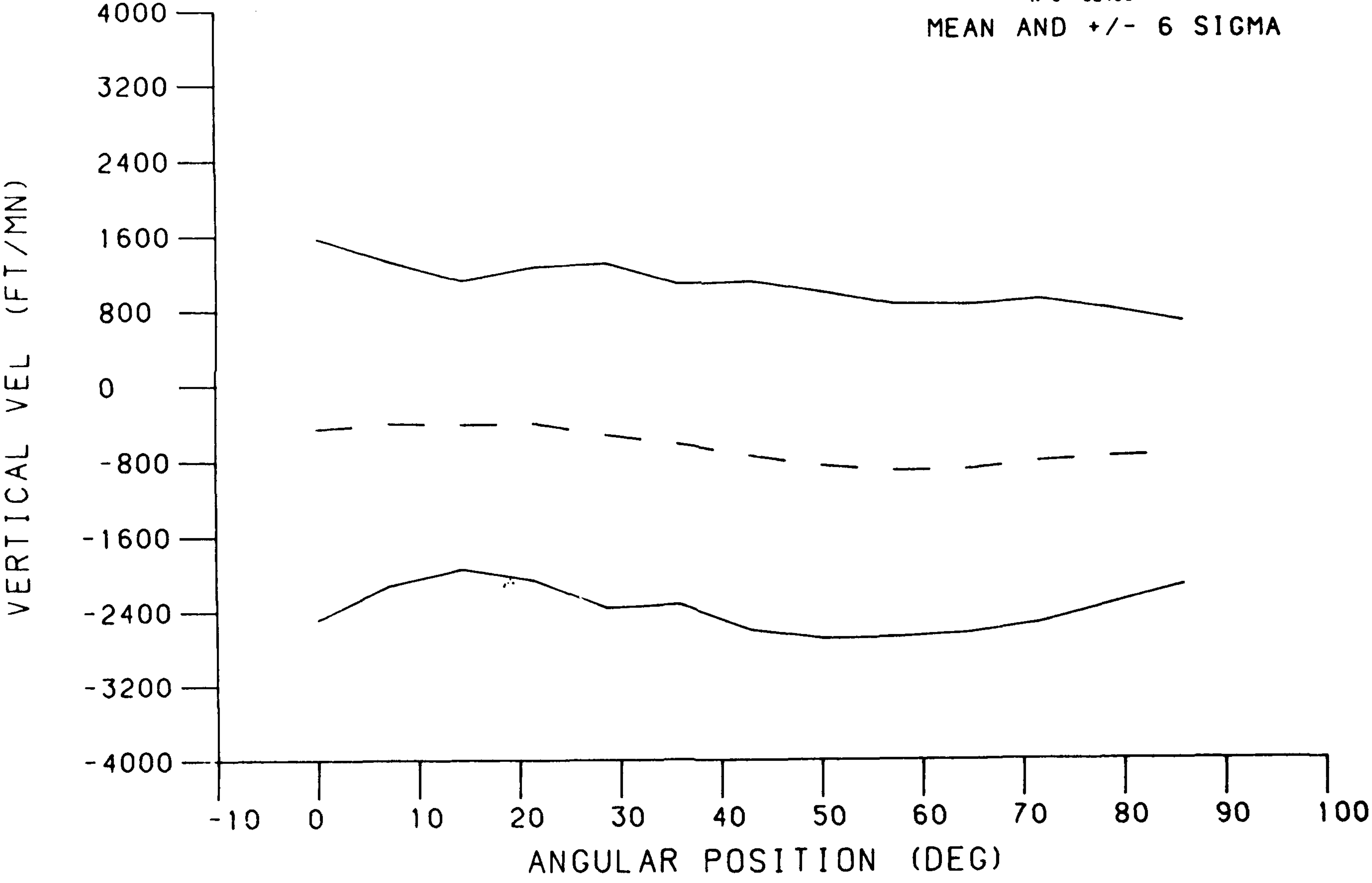
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405

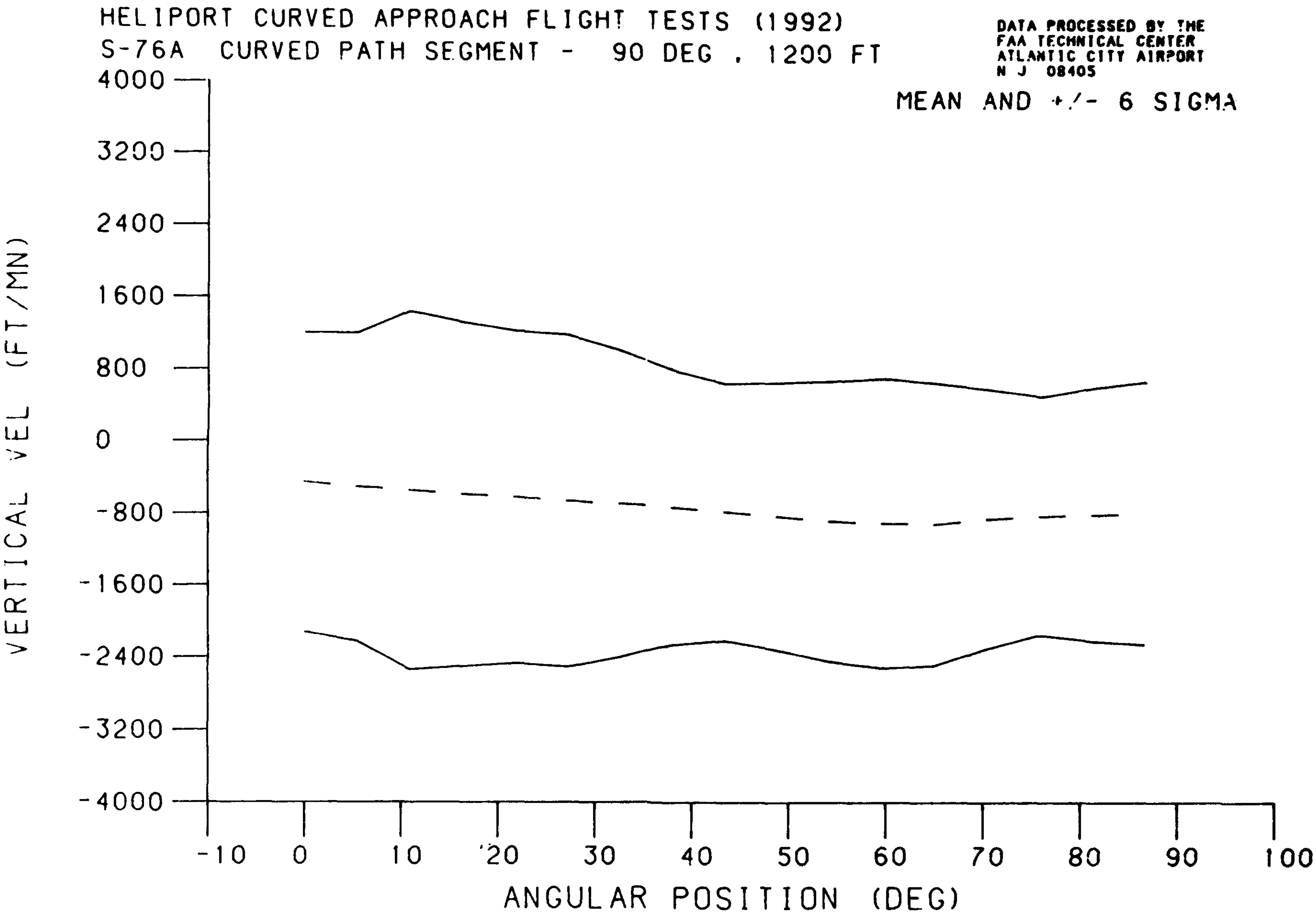


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG , 1600 FT

DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405

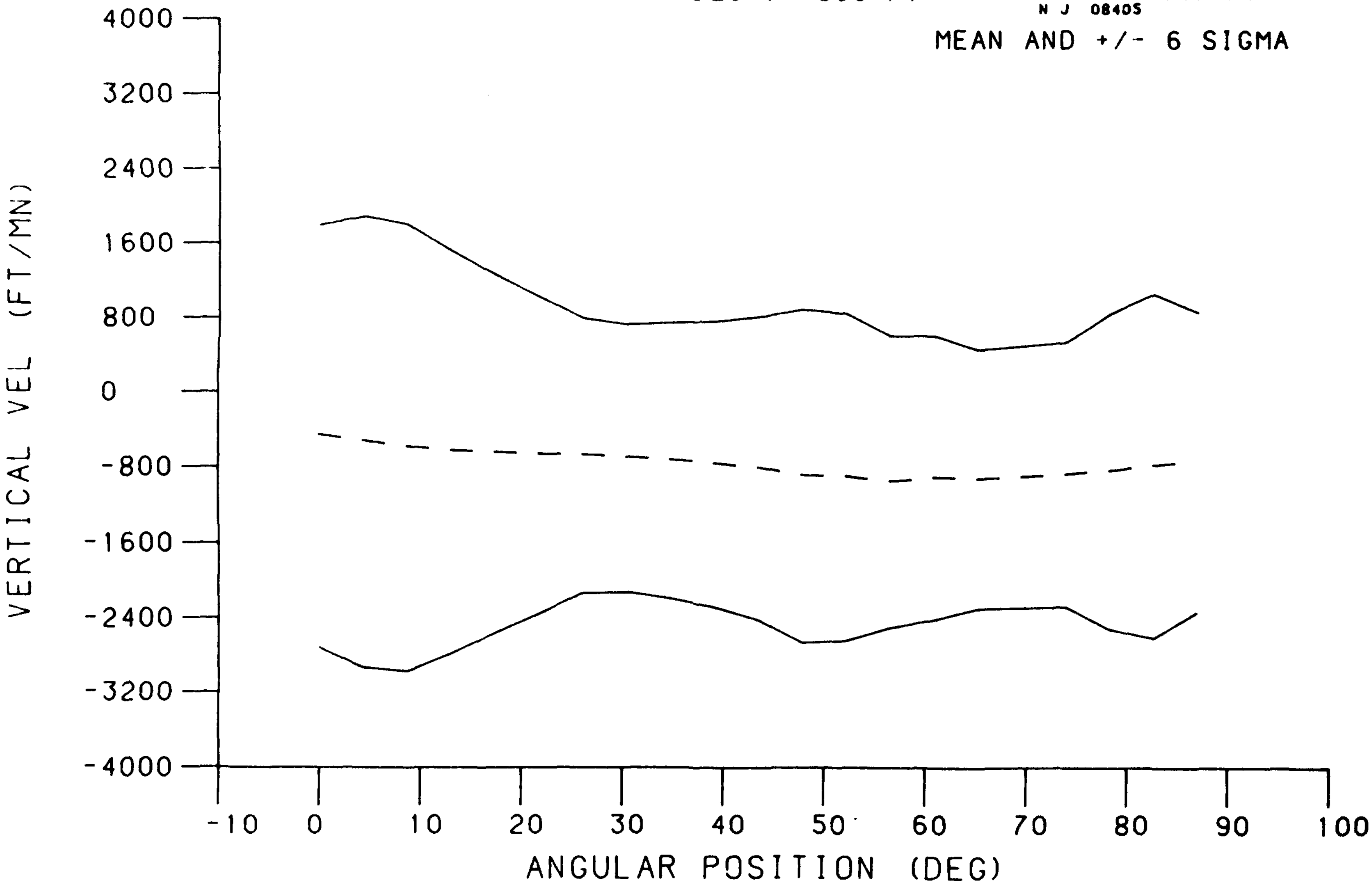
MEAN AND +/- 6 SIGMA

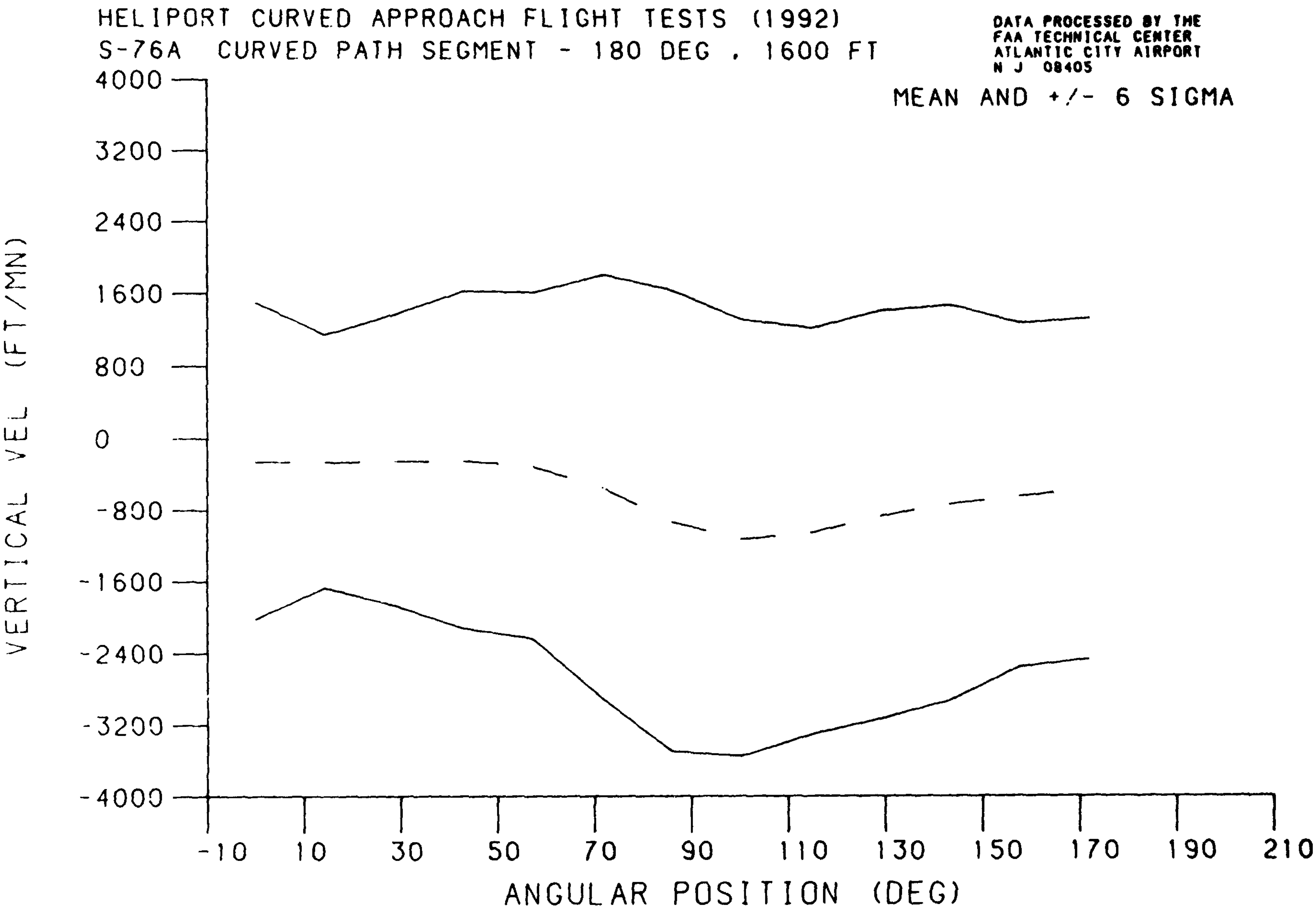



HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG , 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
4000
3200
2400
1600
800
0
-800
-1600
-2400
-3200
-4000
VERTICAL VEL (FT/MN)
-10
0
10
20
30
40
50
60
70
80
90
100
ANGULAR POSITION (DEG)

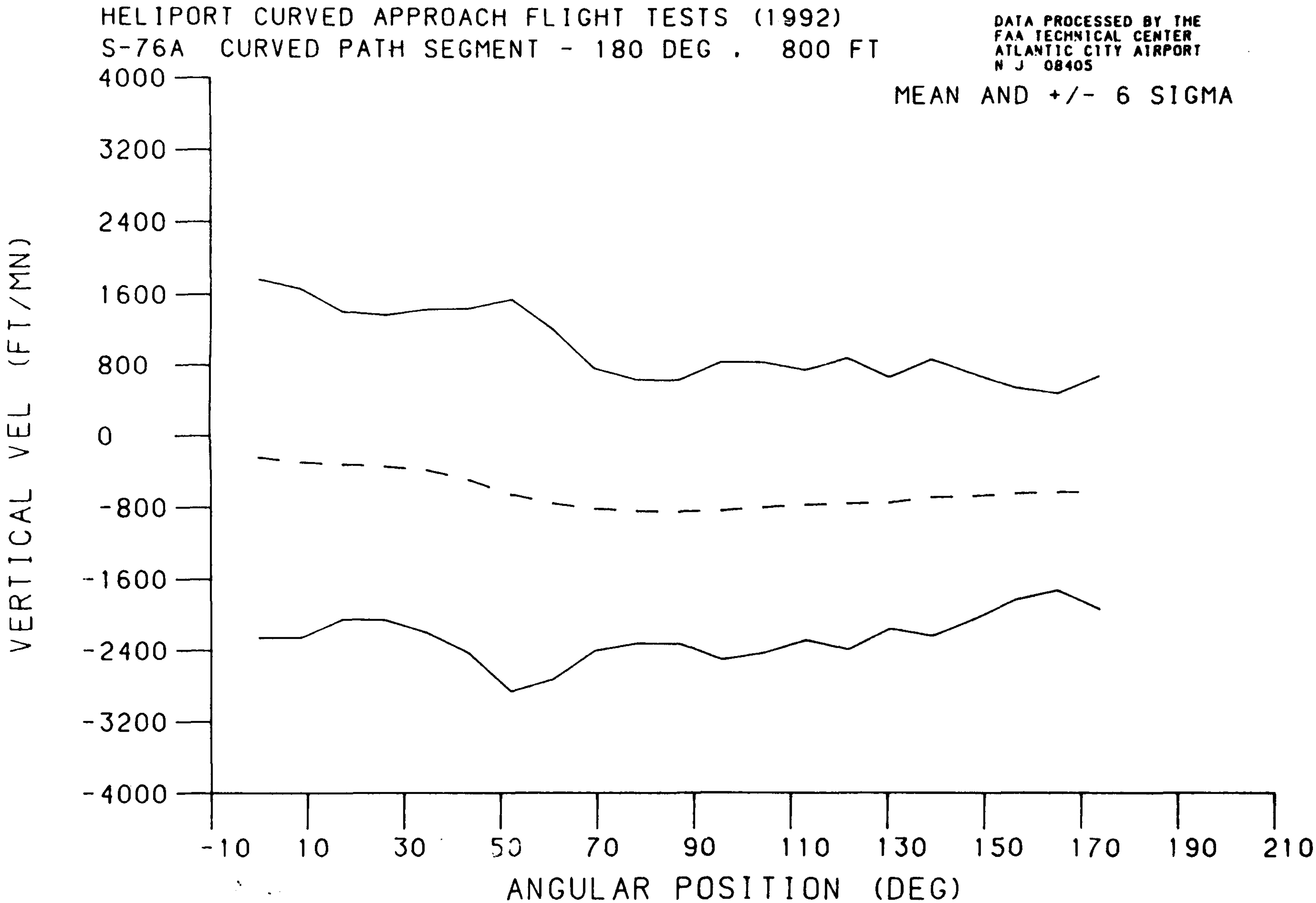
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG , 800 FT

DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405

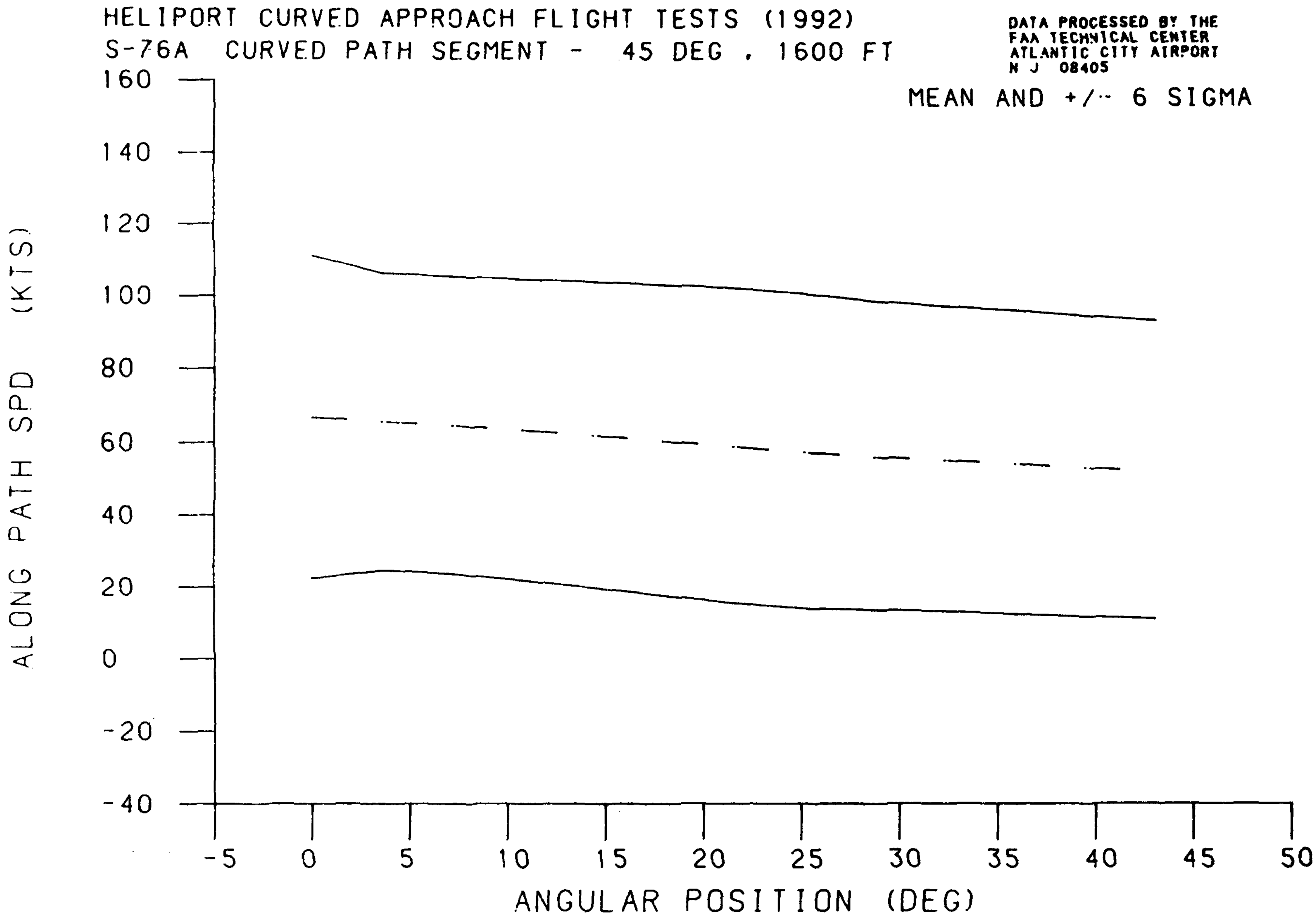




HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG , 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
VERTICAL VEL (FT/MN)
4000
3200
2400
1600
800
0
-800
-1600
-2400
-3200
-4000
-10
10
30
50
70
90
110
130
150
170
190
210
ANGULAR POSITION (DEG)



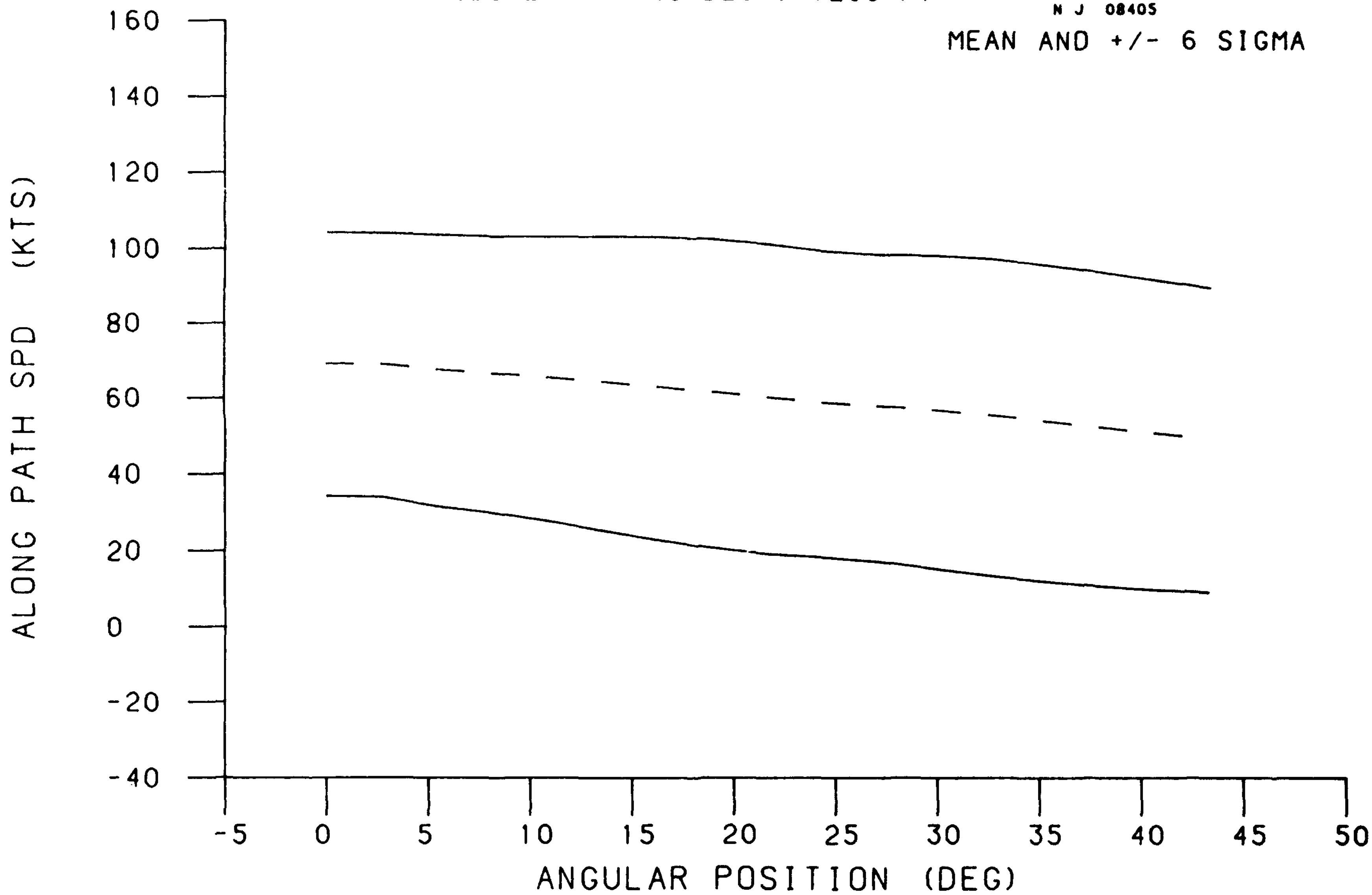
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG . 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
VERTICAL VEL (FT/MN)
4000
3200
2400
1600
800
0
-800
-1600
-2400
-3200
-4000
-10
10
30
50
70
90
110
130
150
170
190
210
ANGULAR POSITION (DEG)

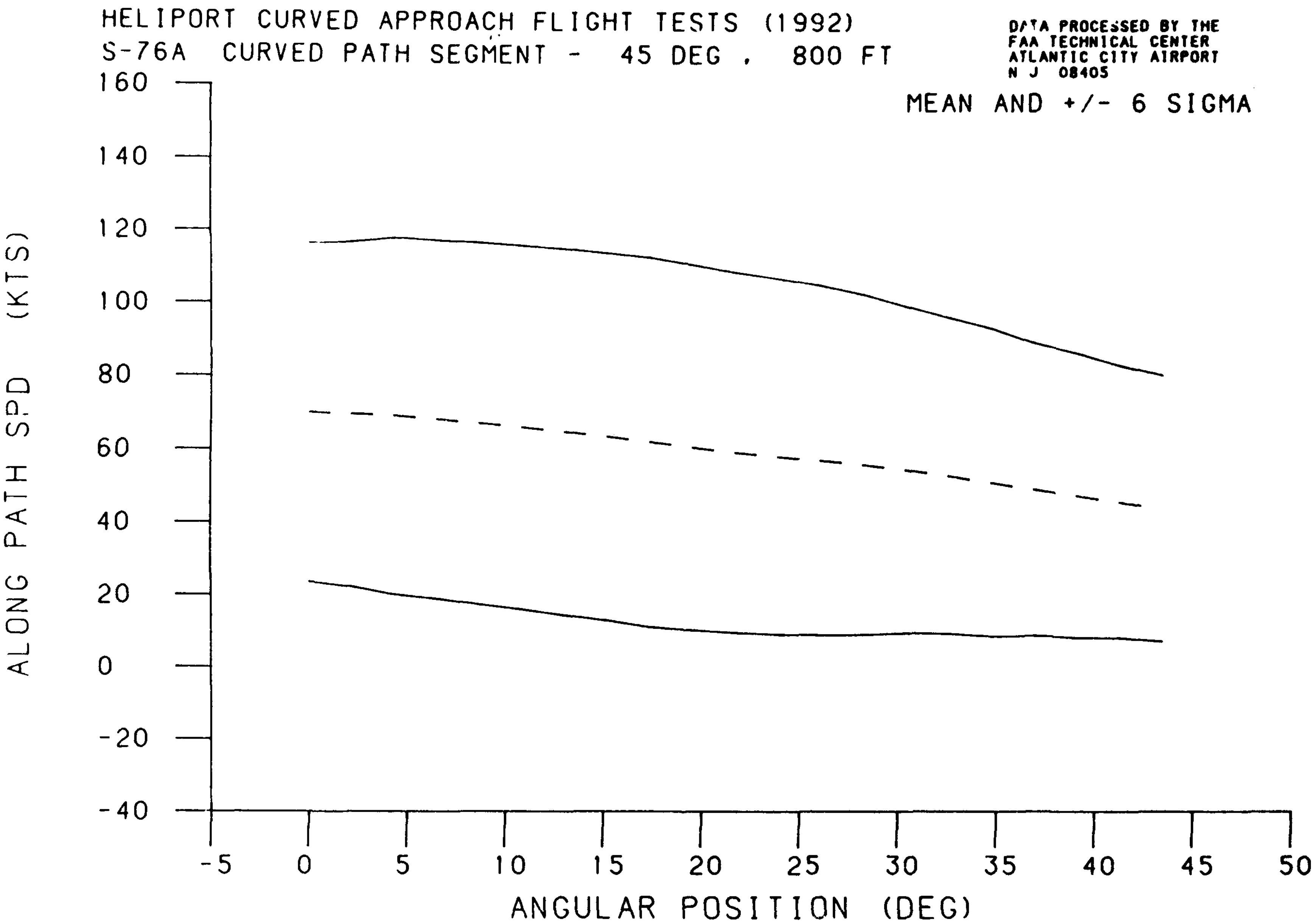


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG , 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
160
140
120
100
80
60
40
20
0
-20
-40
ALONG PATH SPD (KTS)
-5
0
5
10
15
20
25
30
35
40
45
50
ANGULAR POSITION (DEG)

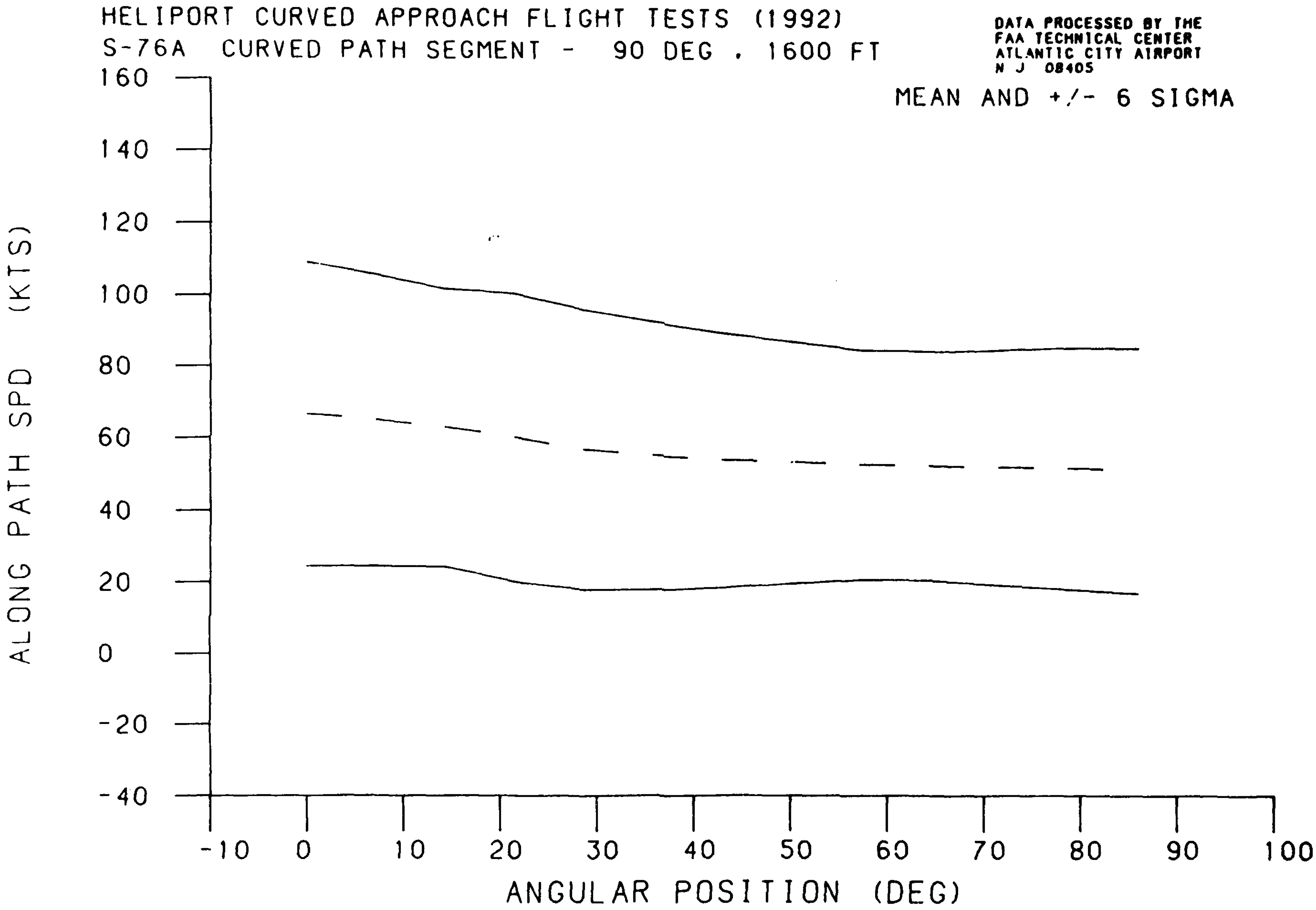
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG , 1200 FT

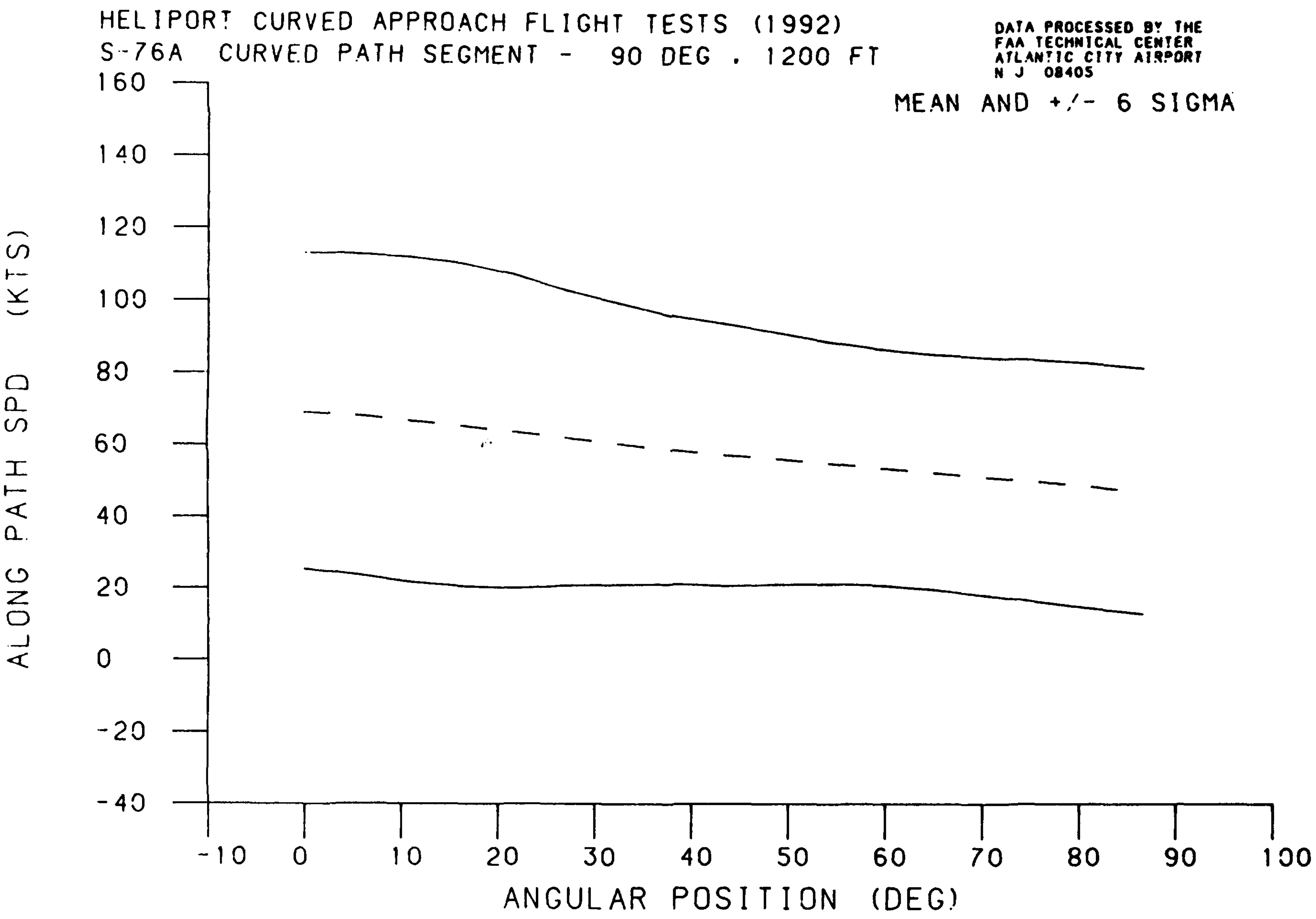
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405

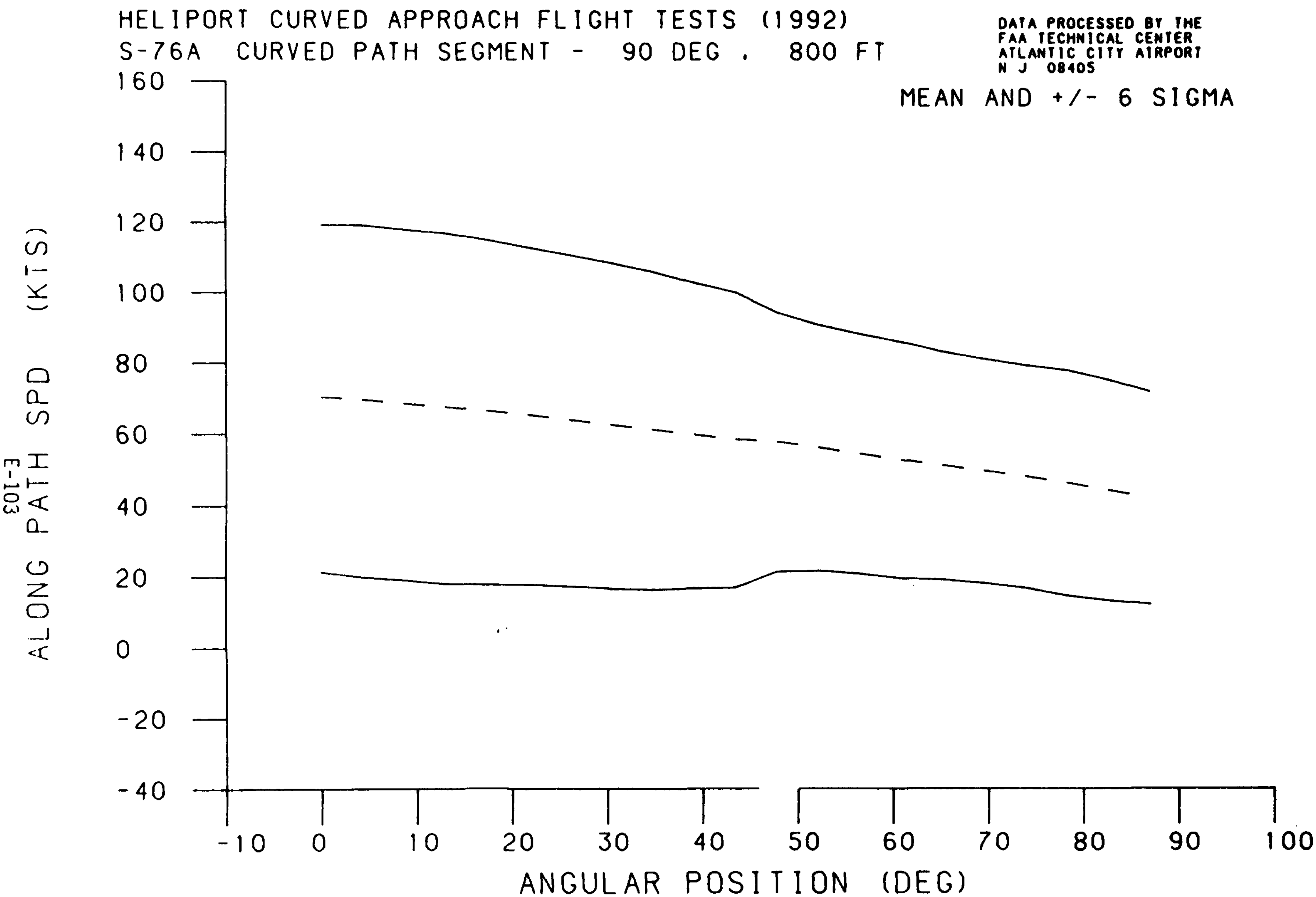


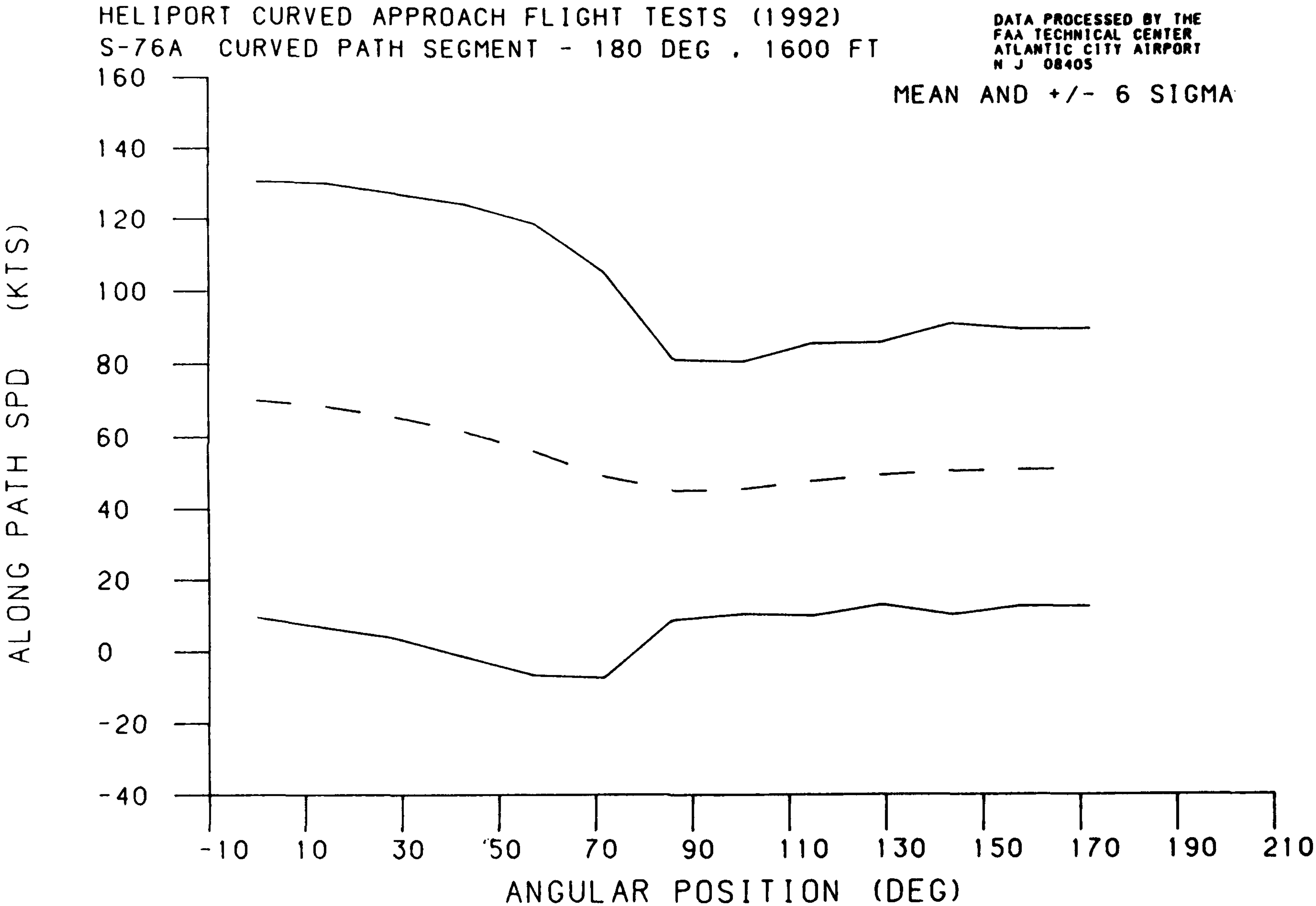


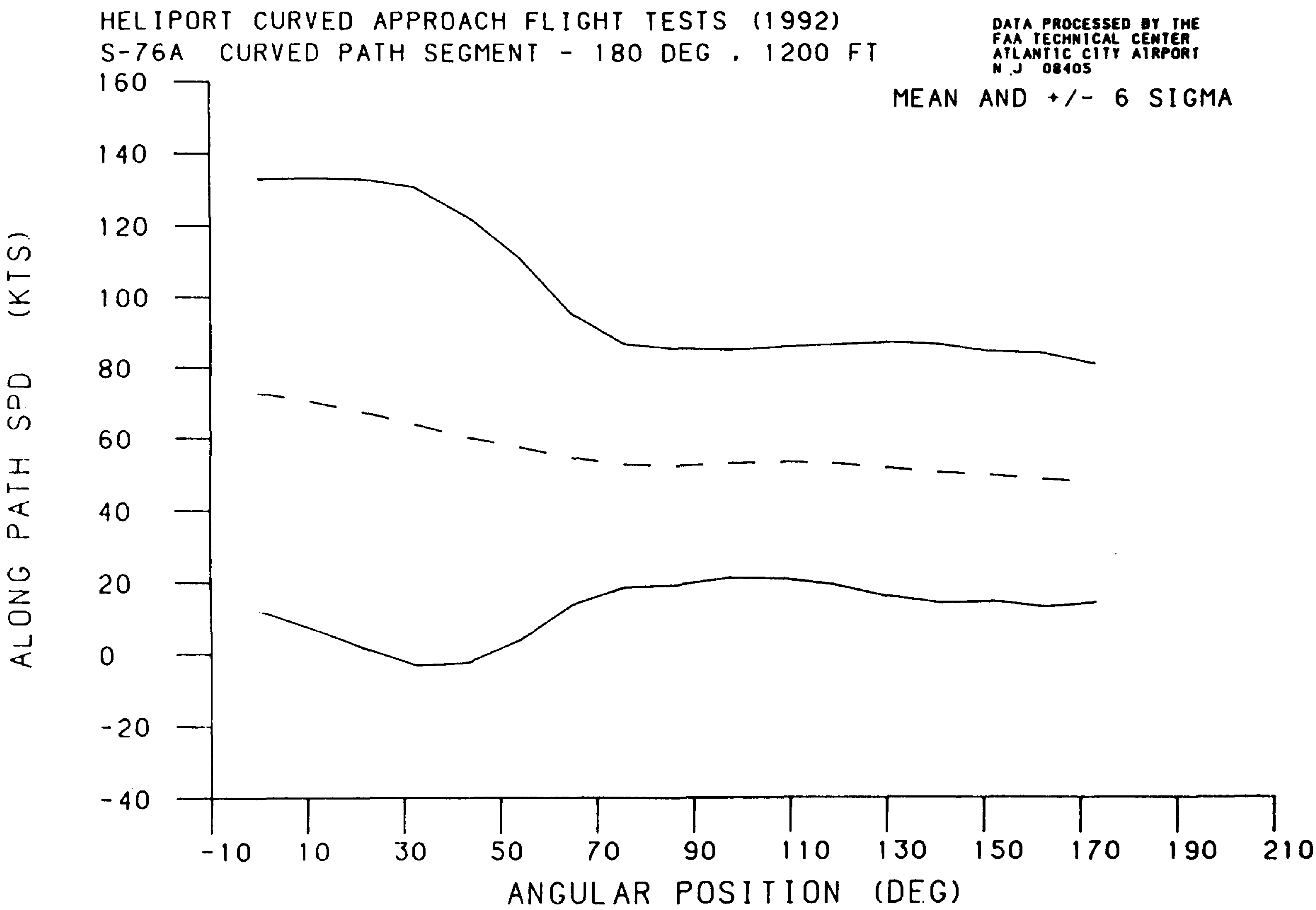
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
ALONG PATH SPD (KTS)
160
140
120
100
80
60
40
20
0
-20
-40
-5
0
5
10
15
20
25
30
35
40
45
50
ANGULAR POSITION (DEG)

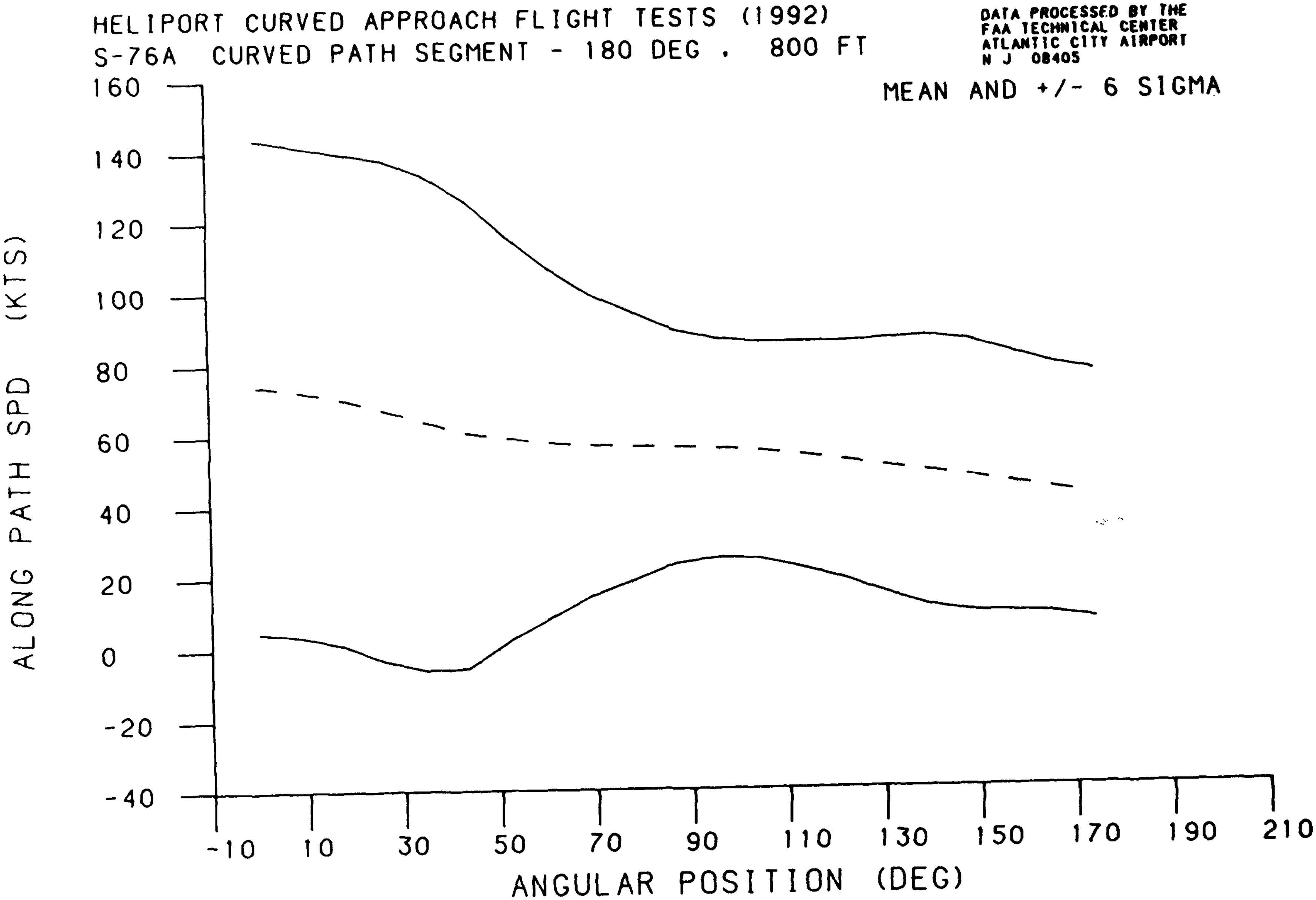

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG , 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
160
140
120
100
80
60
40
20
0
-20
-40
ALONG PATH SPD (KTS)
-10
0
10
20
30
40
50
60
70
80
90
100
ANGULAR POSITION (DEG)

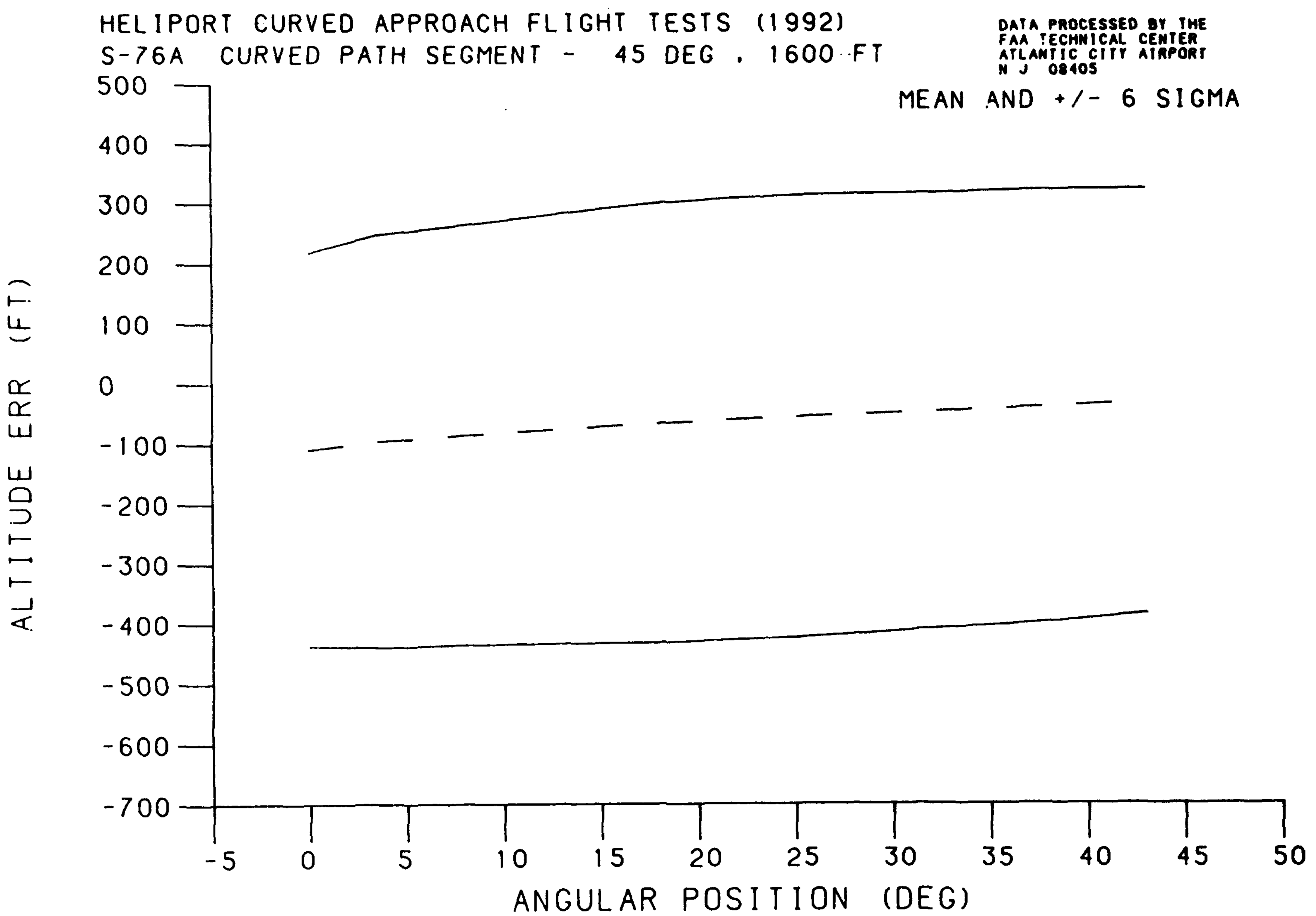

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG . 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
ALONG PATH SPD (KTS)
160
140
120
100
80
60
40
20
0
-20
-40
-10
0
10
20
30
40
50
60
70
80
90
100
ANGULAR POSITION (DEG)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
ALONG PATH SPD (KTS)
160
140
120
100
80
60
40
20
0
-20
-40
-10
0
10
20
30
40
50
60
70
80
90
100
ANGULAR POSITION (DEG)

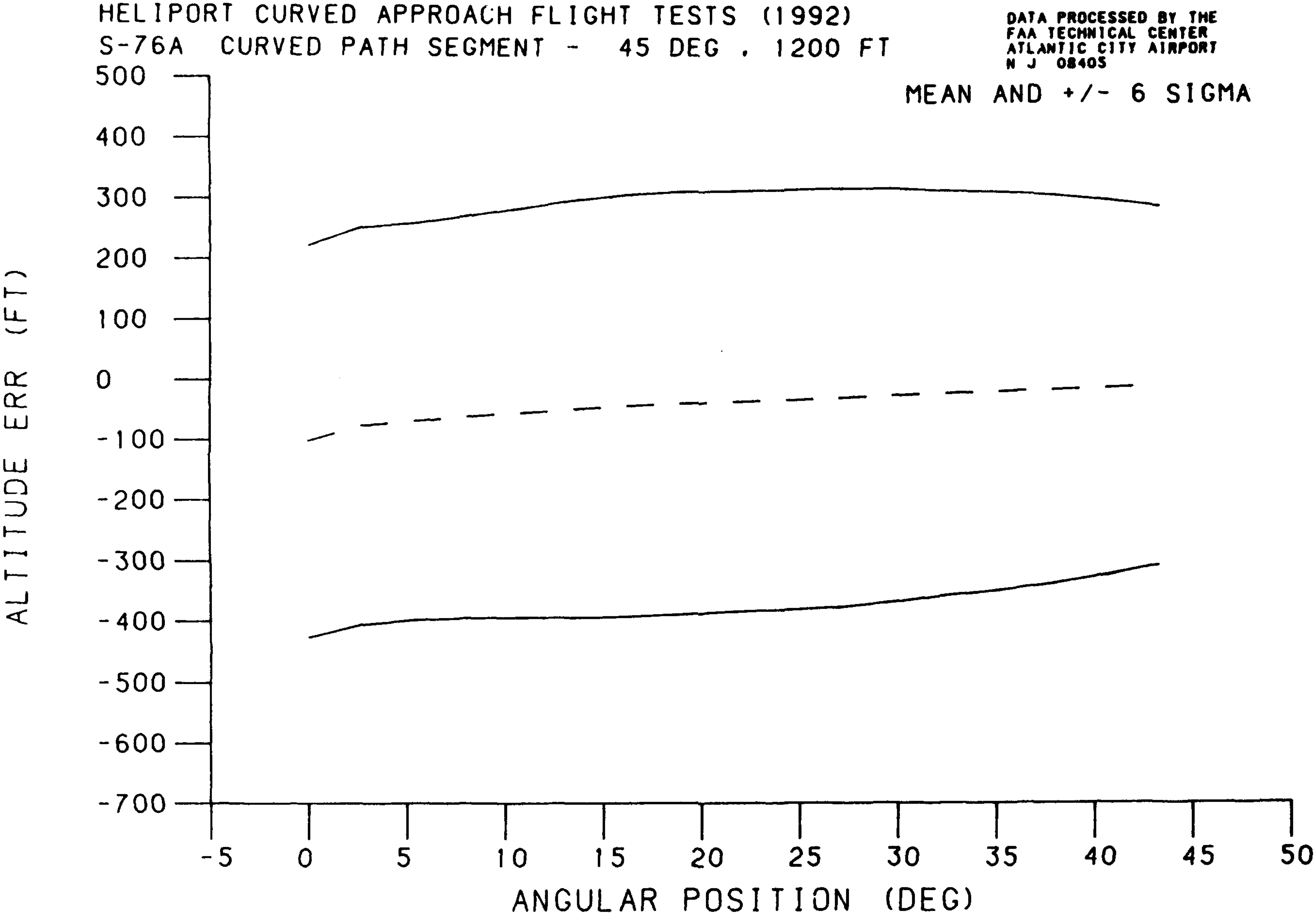

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG . 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
ALONG PATH SPD (KTS)
160
140
120
100
80
60
40
20
0
-20
-40
-10
10
30
50
70
90
110
130
150
170
190
210
ANGULAR POSITION (DEG)

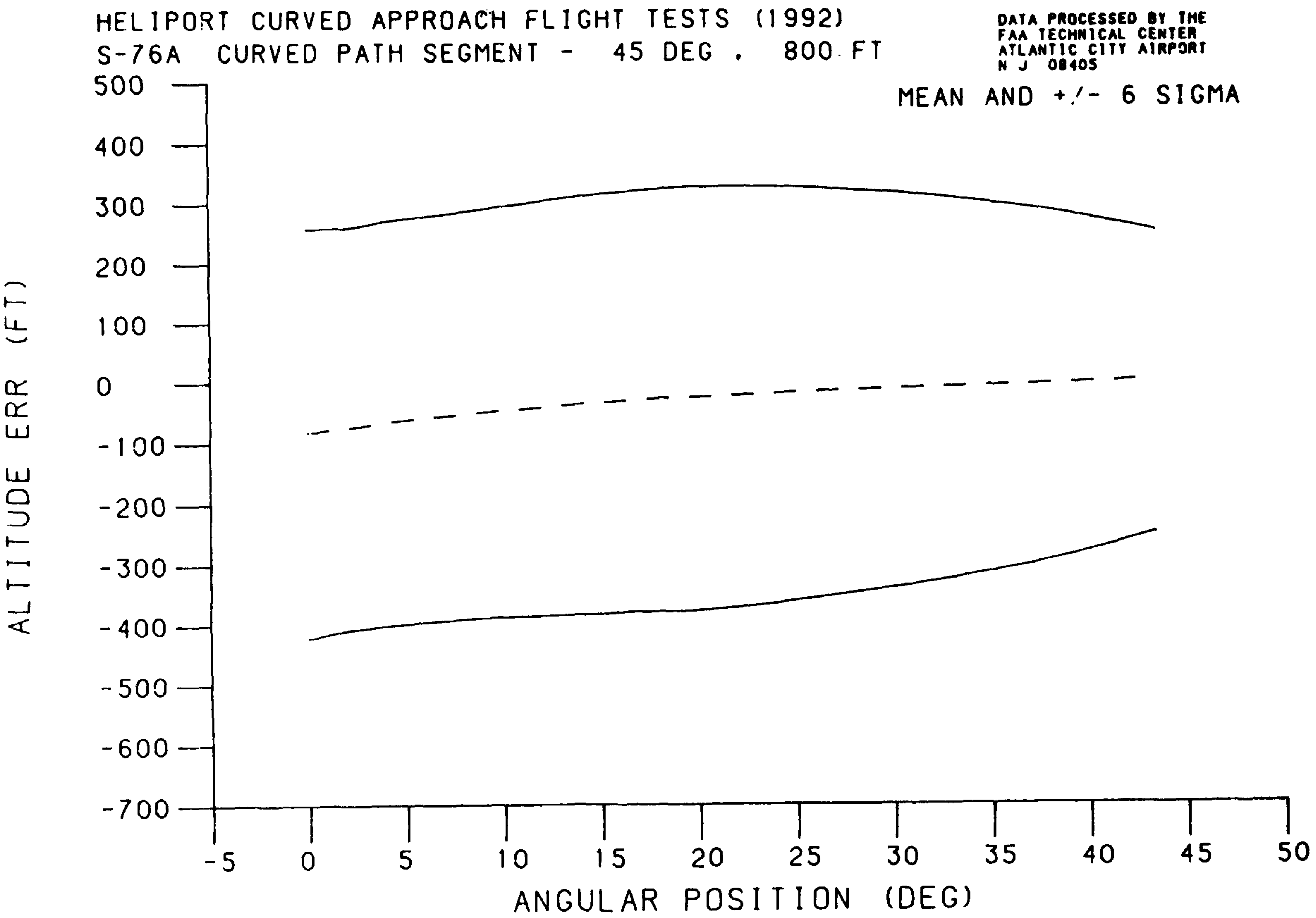

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG , 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N.J 08405
MEAN AND +/- 6 SIGMA
ALONG PATH SPD (KTS)
160
140
120
100
80
60
40
20
0
-20
-40
-10
10
30
50
70
90
110
130
150
170
190
210
ANGULAR POSITION (DEG)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG . 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
ALONG PATH SPD (KTS)
160
140
120
100
80
60
40
20
0
-20
-40
-10
10
30
50
70
90
110
130
150
170
190
210
ANGULAR POSITION (DEG)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG , 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
ALTITUDE ERR (FT)
500
400
300
200
100
0
-100
-200
-300
-400
-500
-600
-700
-5
0
5
10
15
20
25
30
35
40
45
50
ANGULAR POSITION (DEG)

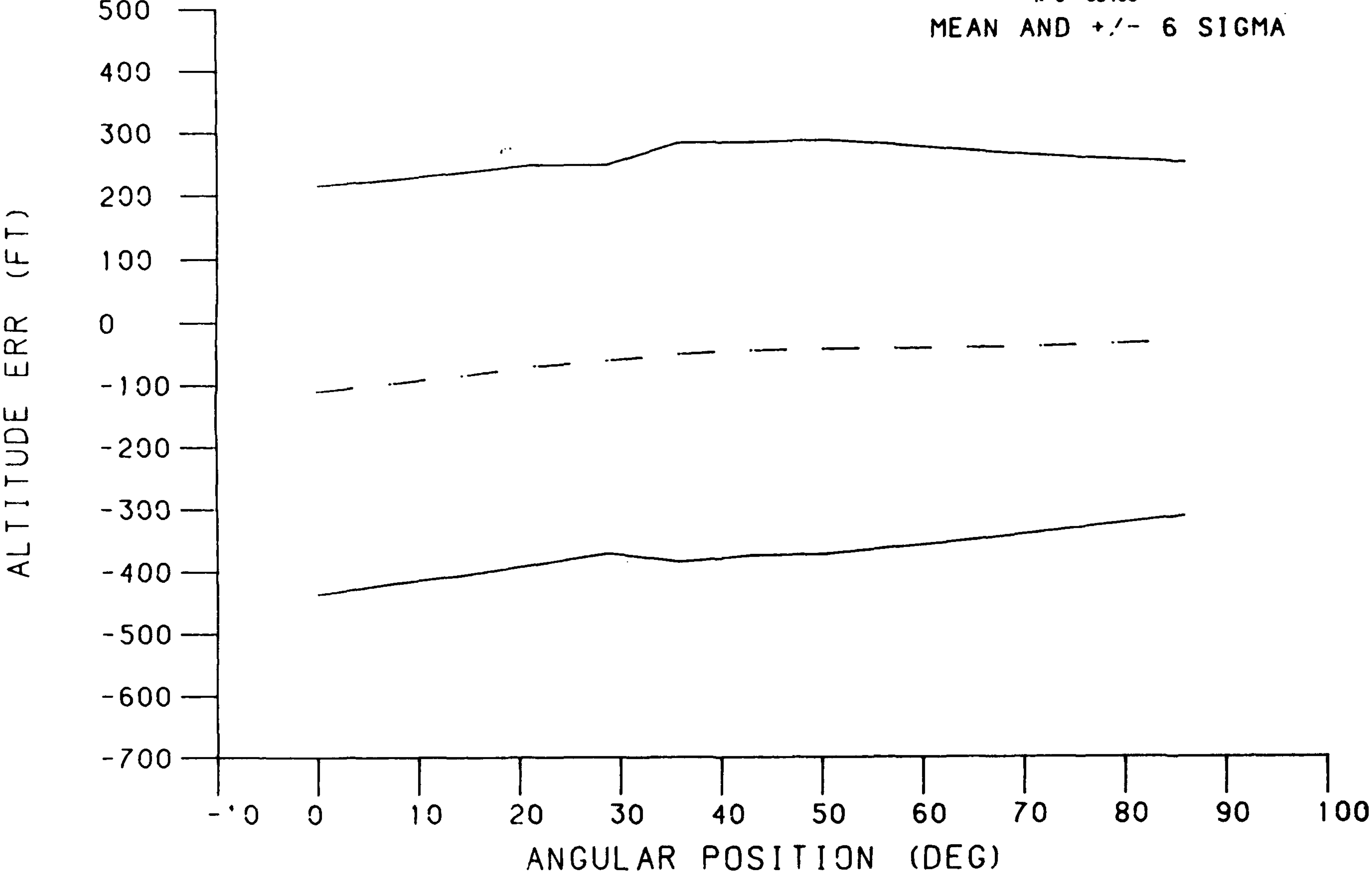
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG , 1200 FT

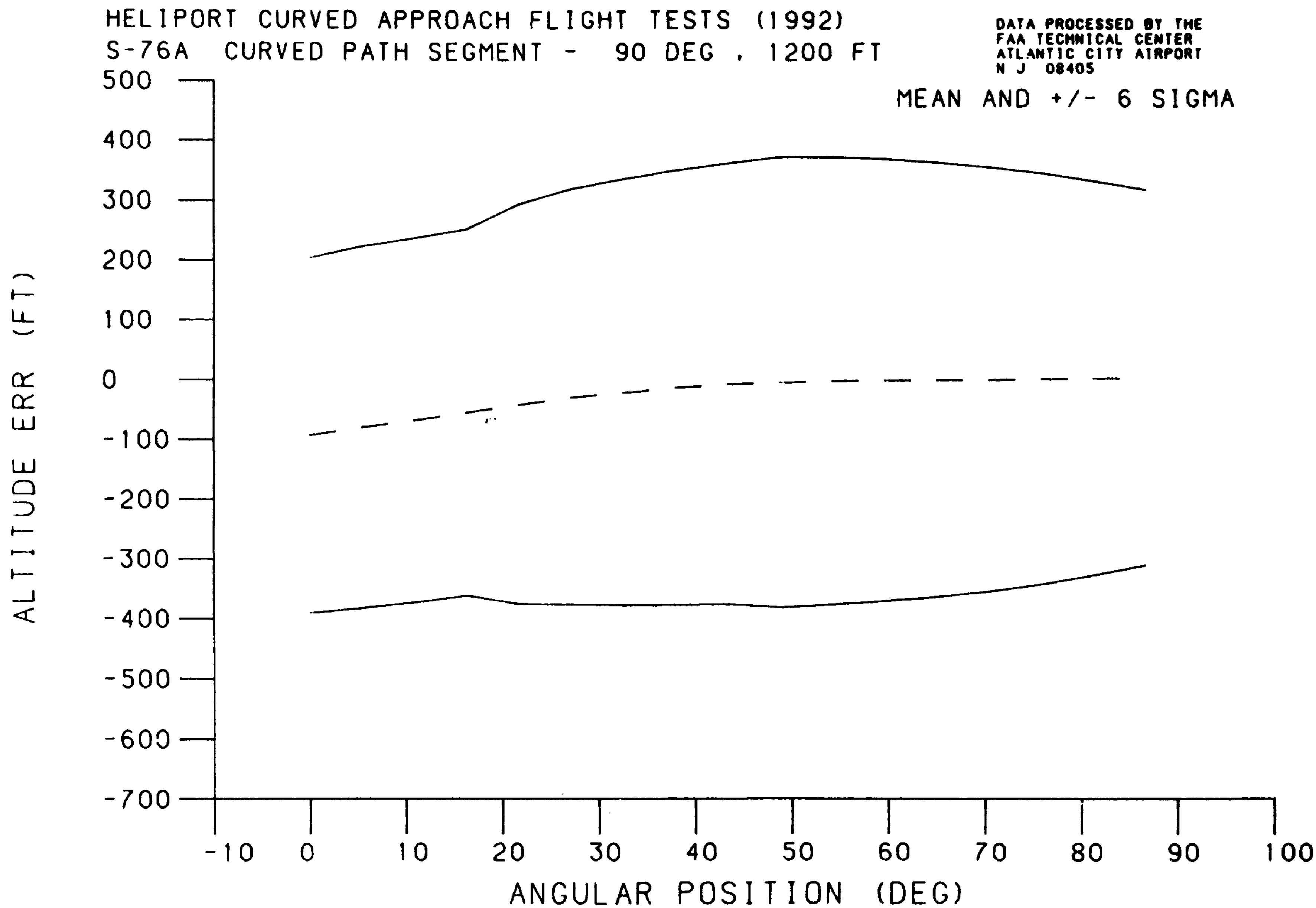


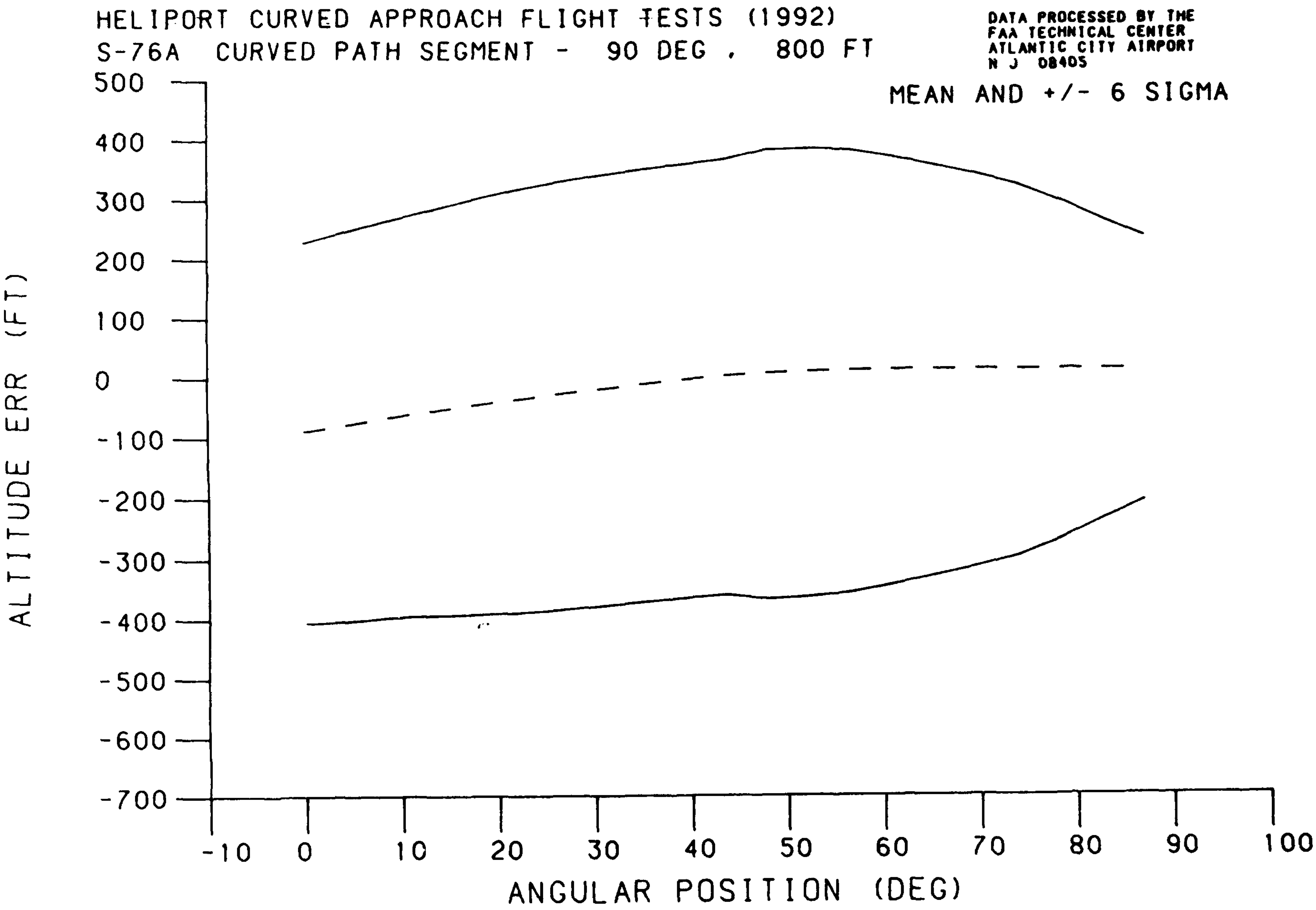

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
ALTITUDE ERR (FT)
500
400
300
200
100
0
-100
-200
-300
-400
-500
-600
-700
-5
0
5
10
15
20
25
30
35
40
45
50
ANGULAR POSITION (DEG)

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG , 1600 FT

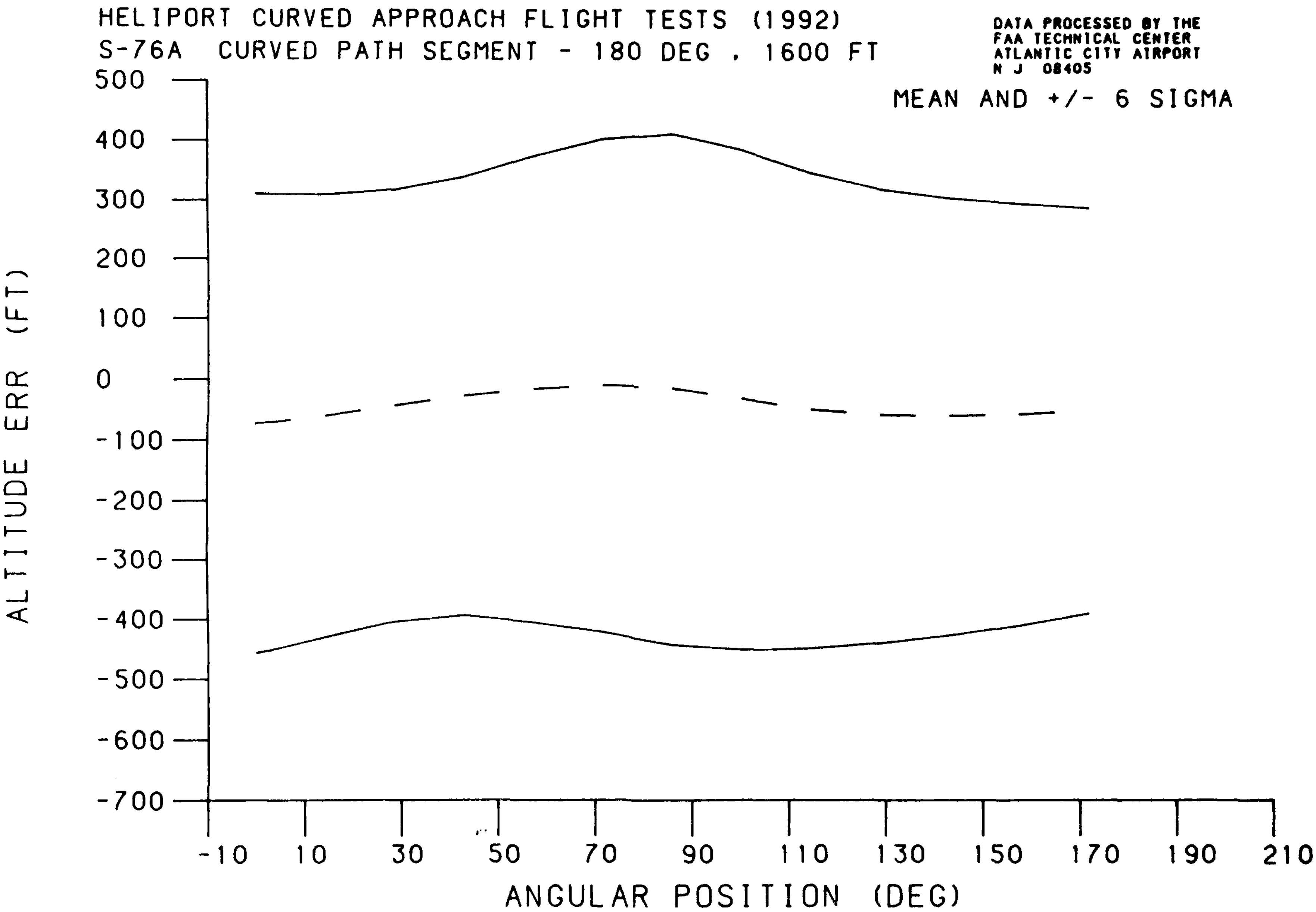
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405



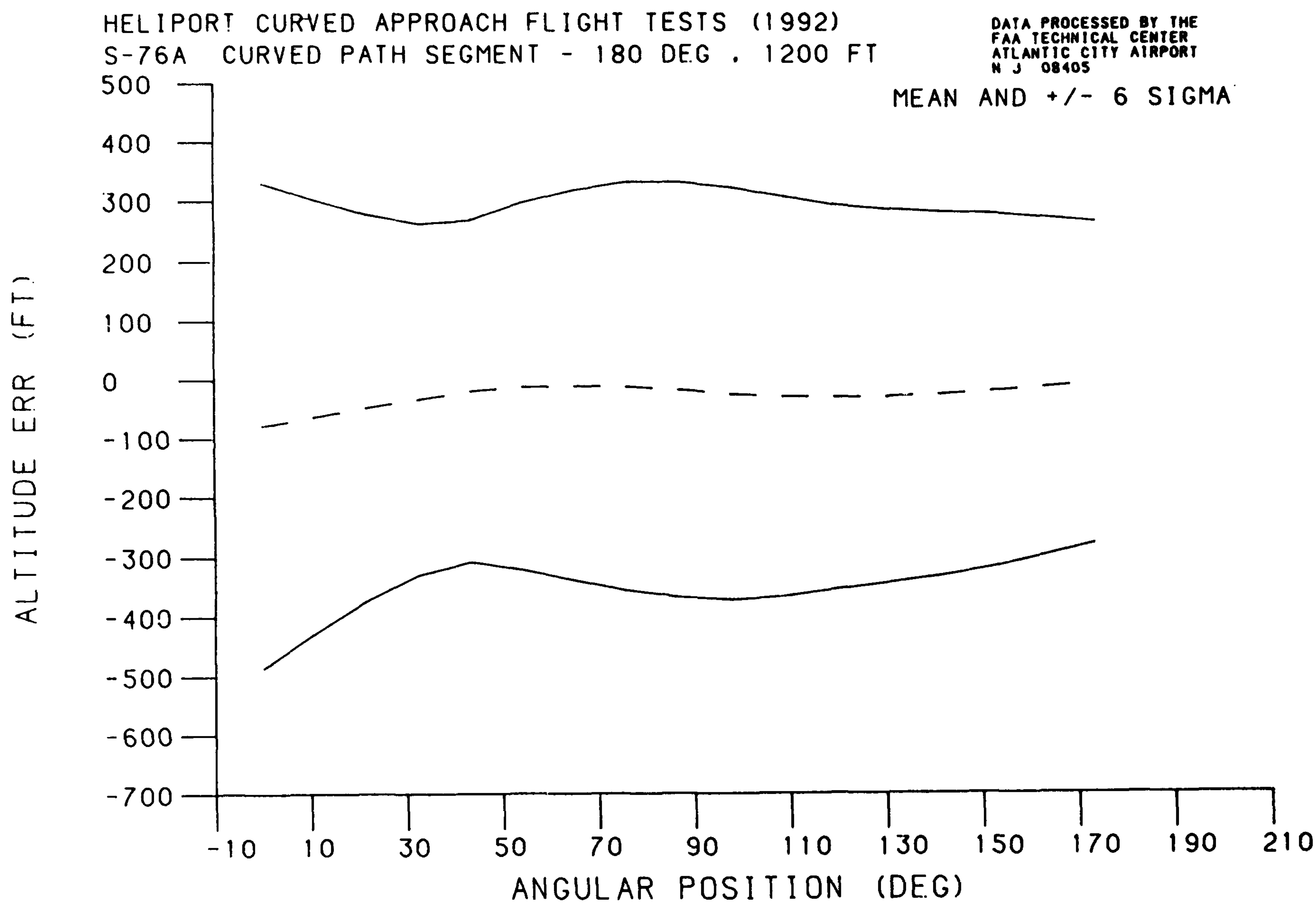

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG , 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
500
400
300
200
100
0
-100
-200
-300
-400
-500
-600
-700
ALTITUDE ERR (FT)
-10
0
10
20
30
40
50
60
70
80
90
100
ANGULAR POSITION (DEG)

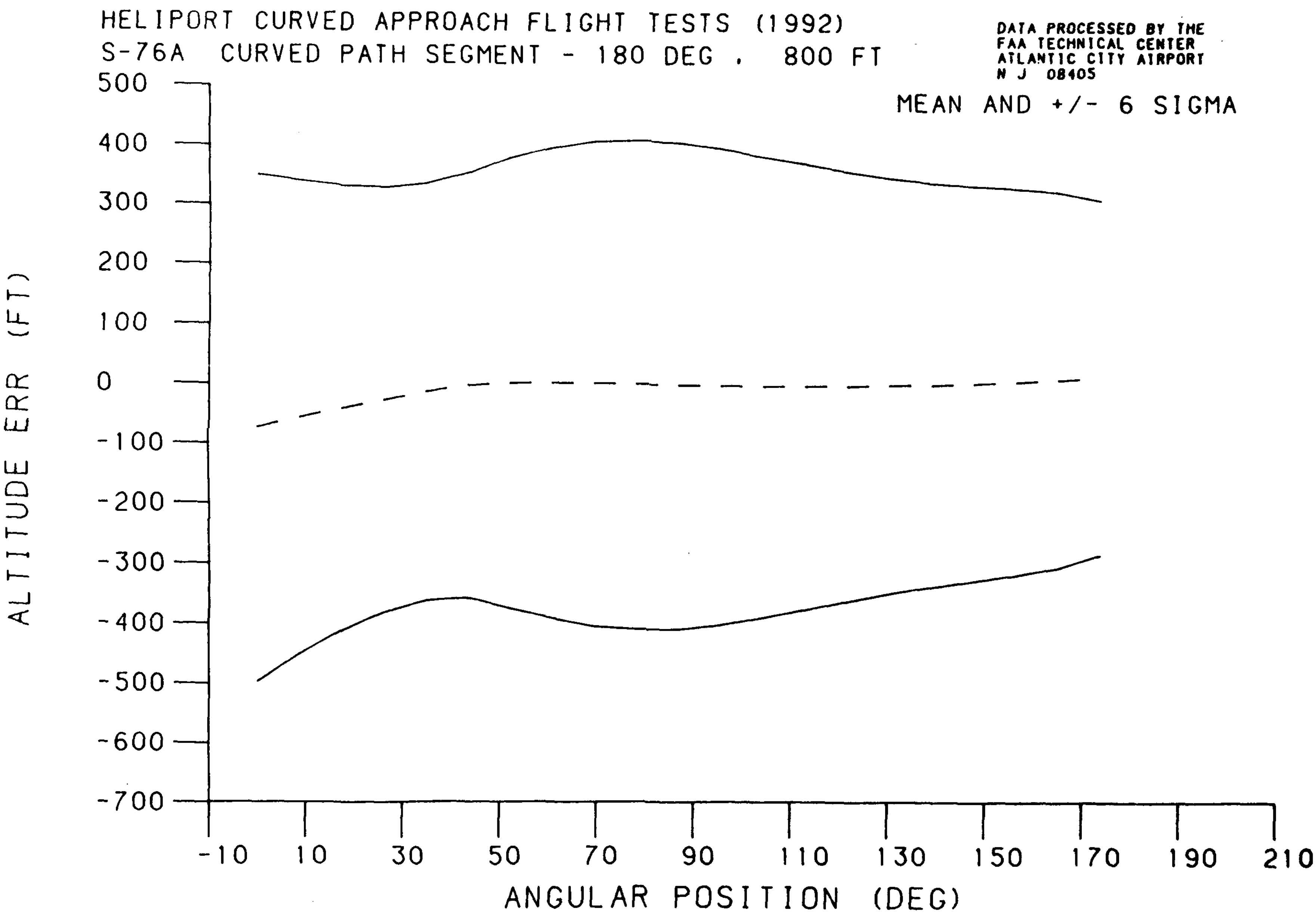


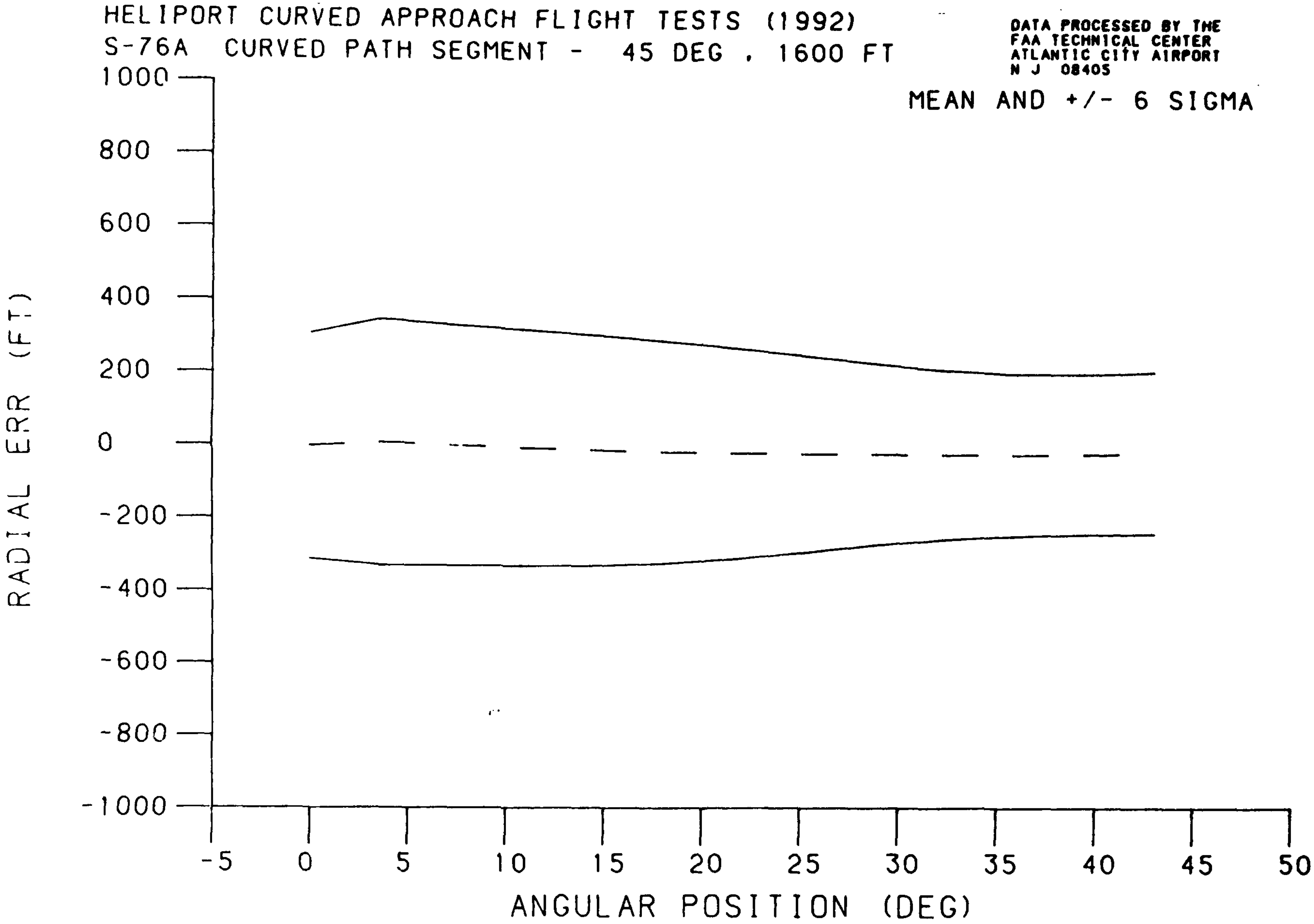
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
500
400
300
200
100
0
-100
-200
-300
-400
-500
-600
-700
ALTITUDE ERR (FT)
-10
0
10
20
30
40
50
60
70
80
90
100
ANGULAR POSITION (DEG)

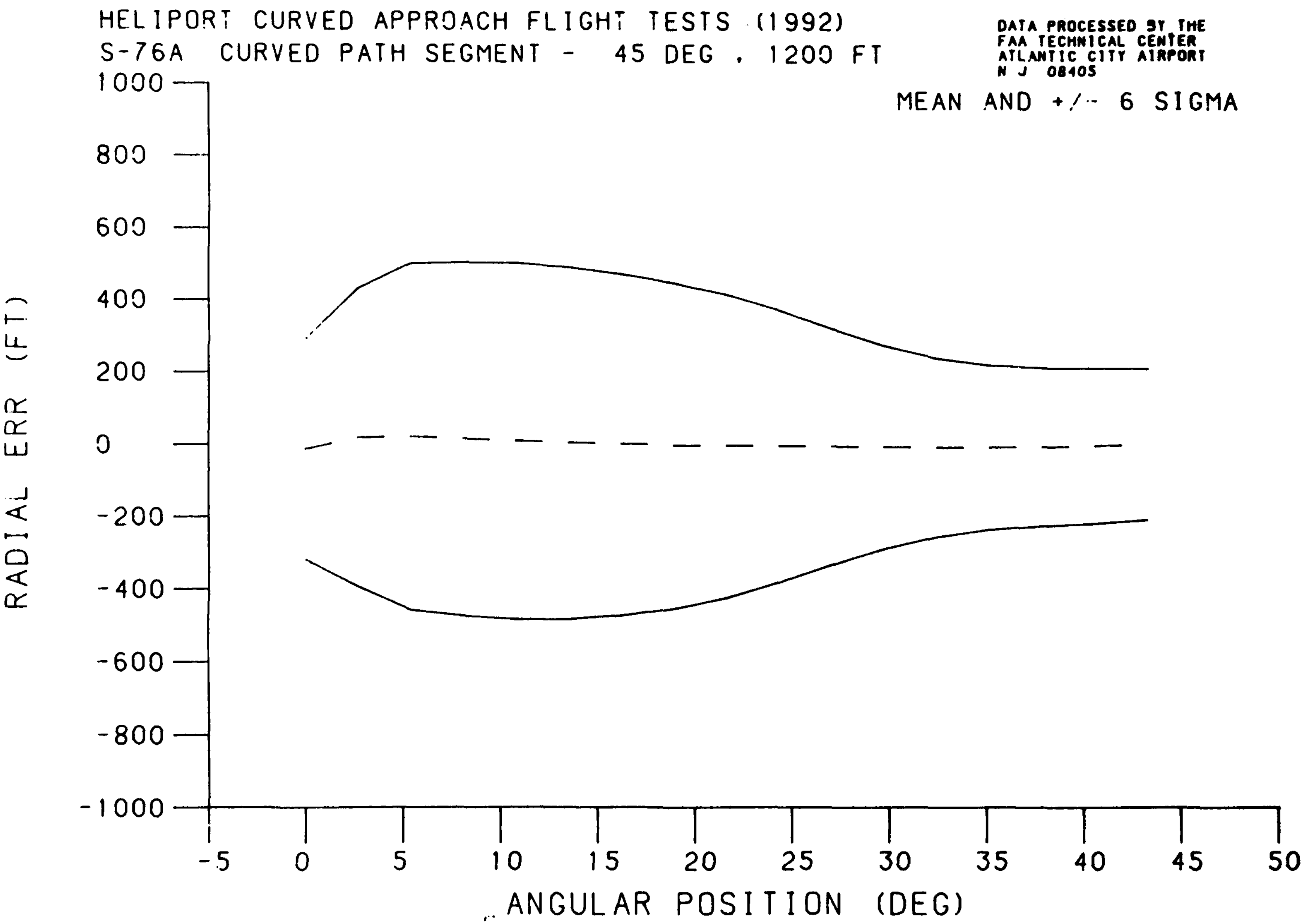


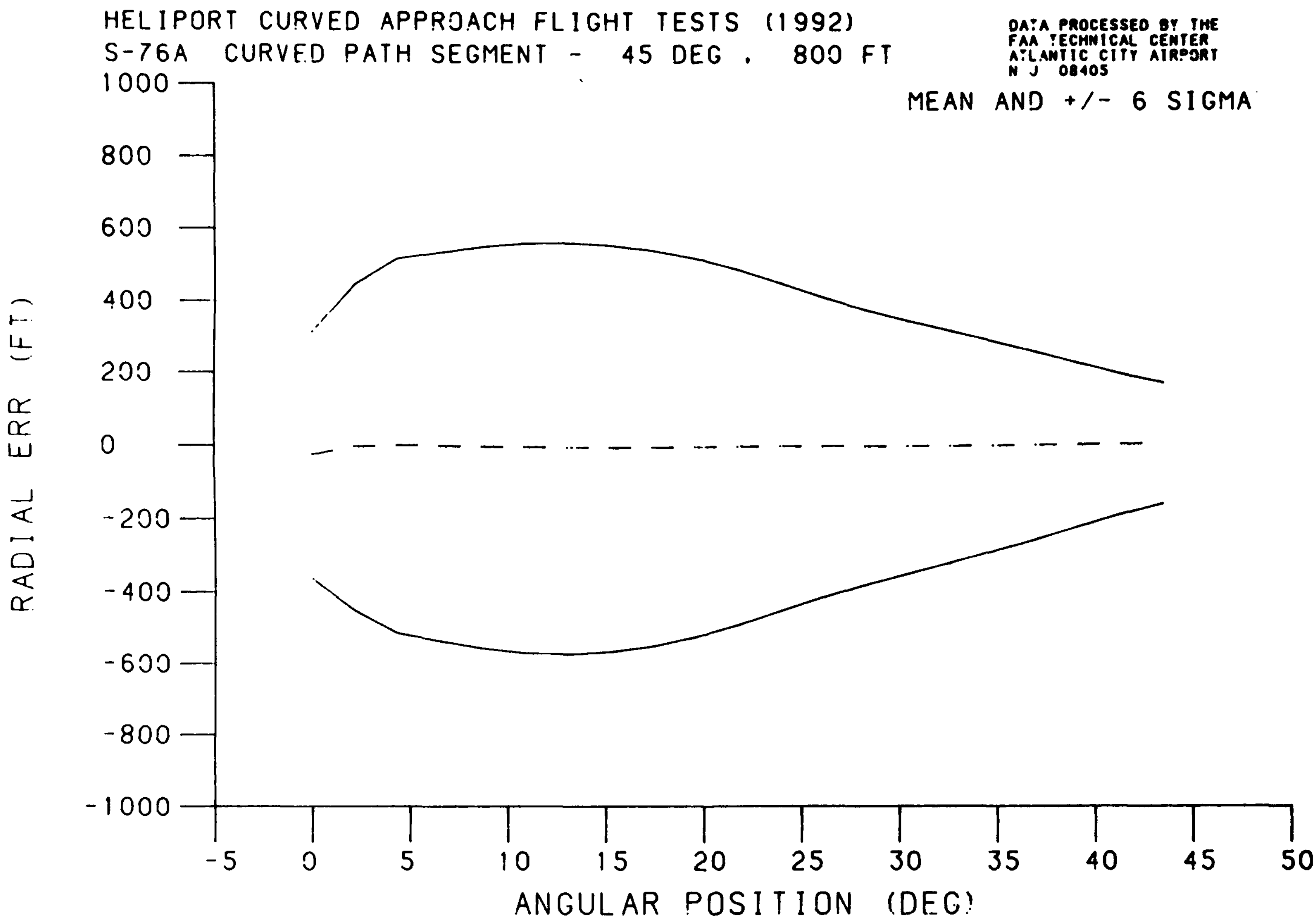
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG , 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
500
400
300
200
100
0
-100
-200
-300
-400
-500
-600
-700
ALTITUDE ERR (FT)
-10
10
30
50
70
90
110
130
150
170
190
210
ANGULAR POSITION (DEG)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG . 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
500
400
300
200
100
0
-100
-200
-300
-400
-500
-600
-700
ALTITUDE ERR (FT)
-10
10
30
50
70
90
110
130
150
170
190
210
ANGULAR POSITION (DEG)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
ALTITUDE ERR (FT)
500
400
300
200
100
0
-100
-200
-300
-400
-500
-600
-700
-10
10
30
50
70
90
110
130
150
170
190
210
ANGULAR POSITION (DEG)

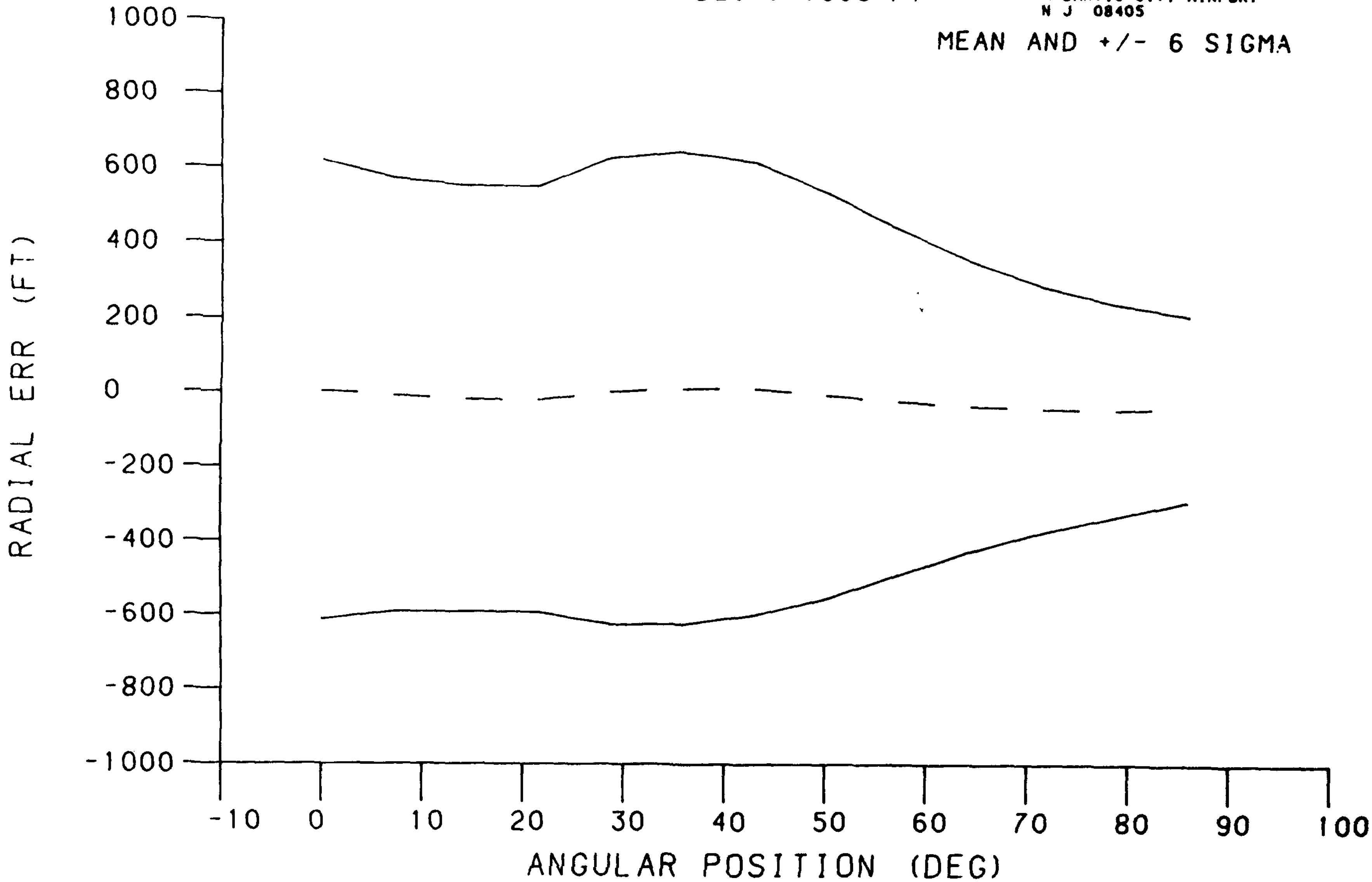

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG , 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
RADIAL ERR (FT)
1000
800
600
400
200
0
-200
-400
-600
-800
-1000
-5
0
5
10
15
20
25
30
35
40
45
50
ANGULAR POSITION (DEG)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG , 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
RADIAL ERR (FT)
1000
800
600
400
200
0
-200
-400
-600
-800
-1000
-5
0
5
10
15
20
25
30
35
40
45
50
ANGULAR POSITION (DEG)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 45 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
1000
800
600
400
200
0
-200
-400
-600
-800
-1000
RADIAL ERR (FT)
-5
0
5
10
15
20
25
30
35
40
45
50
ANGULAR POSITION (DEG)

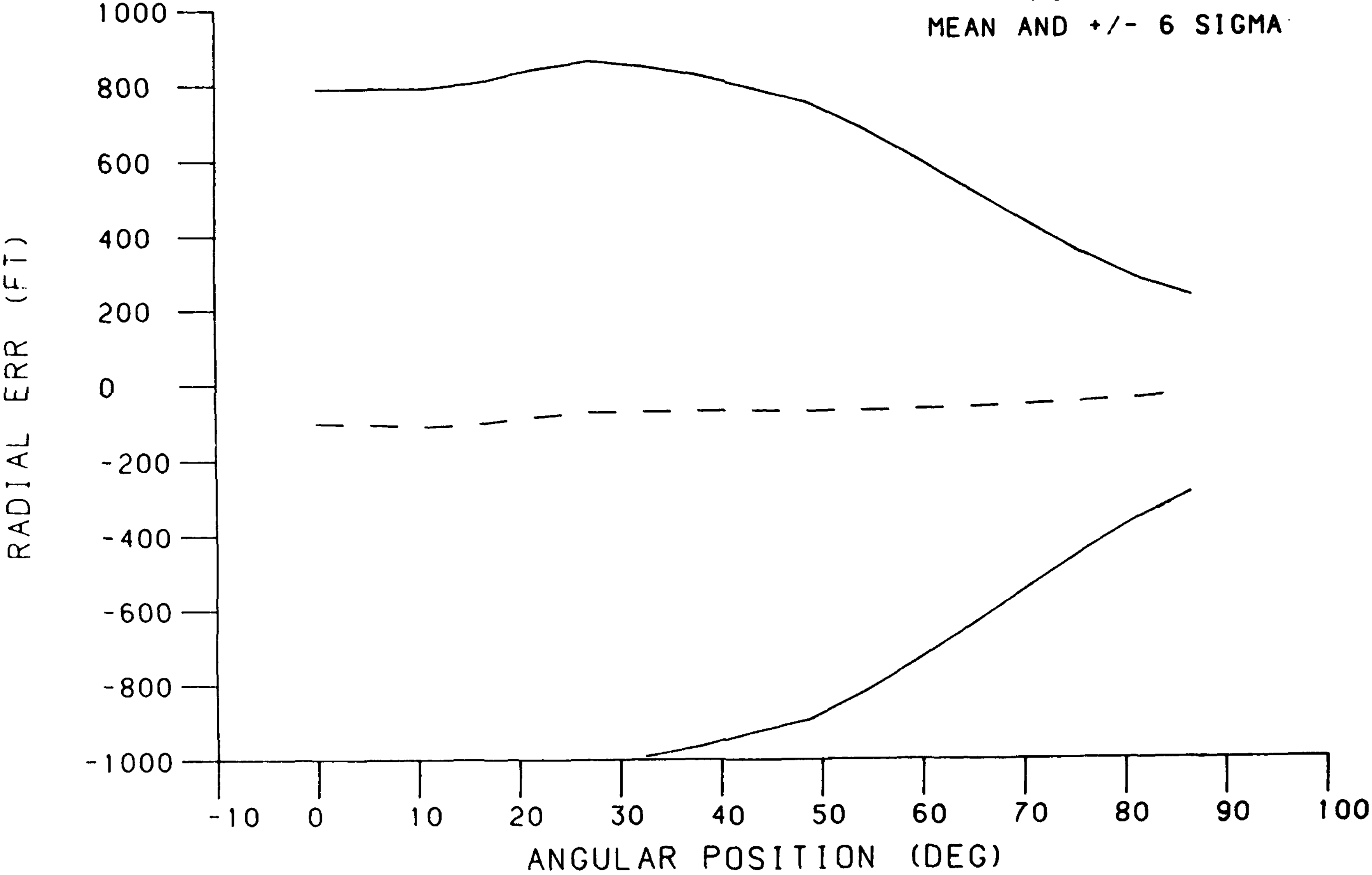
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG , 1600 FT

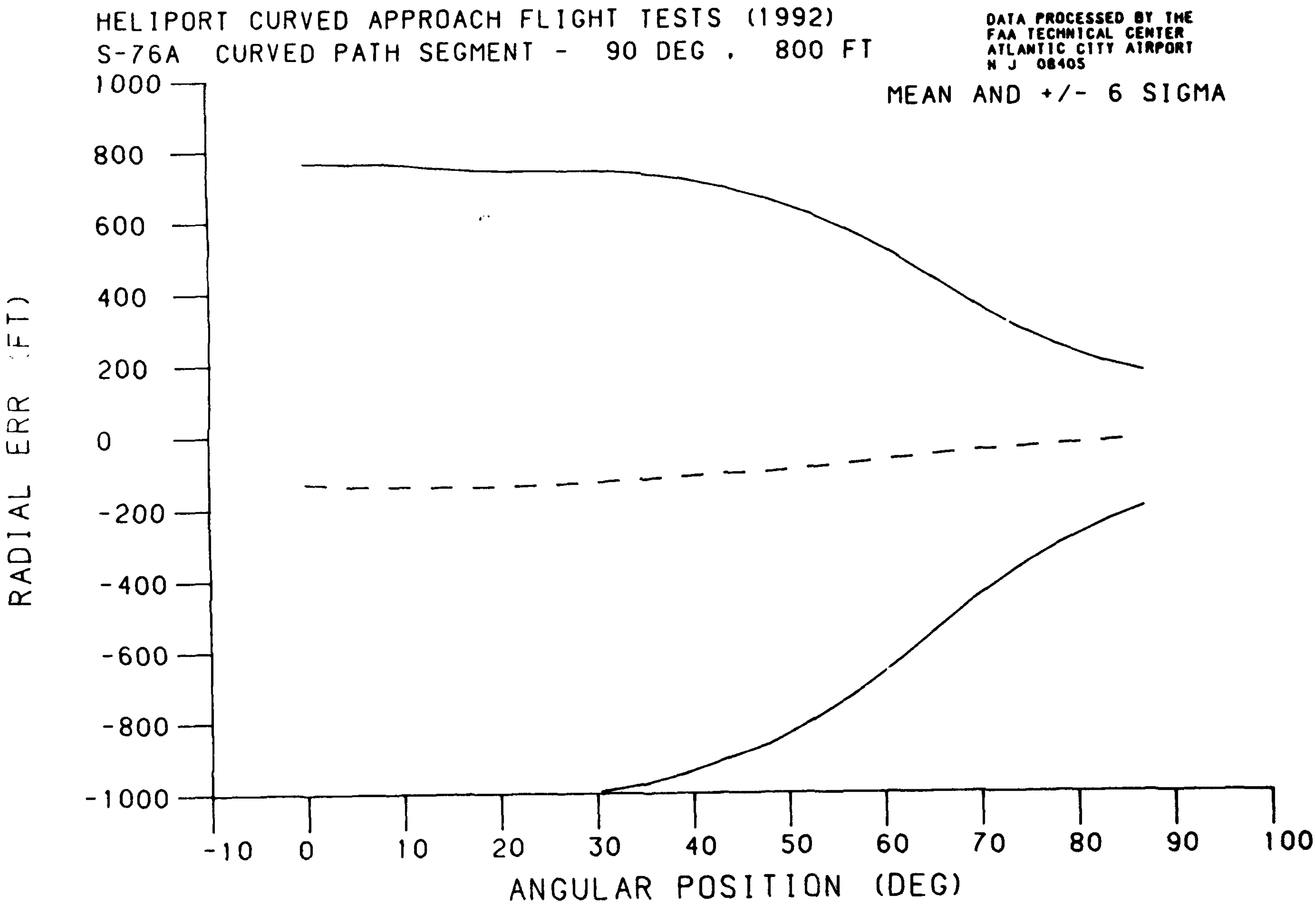
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405

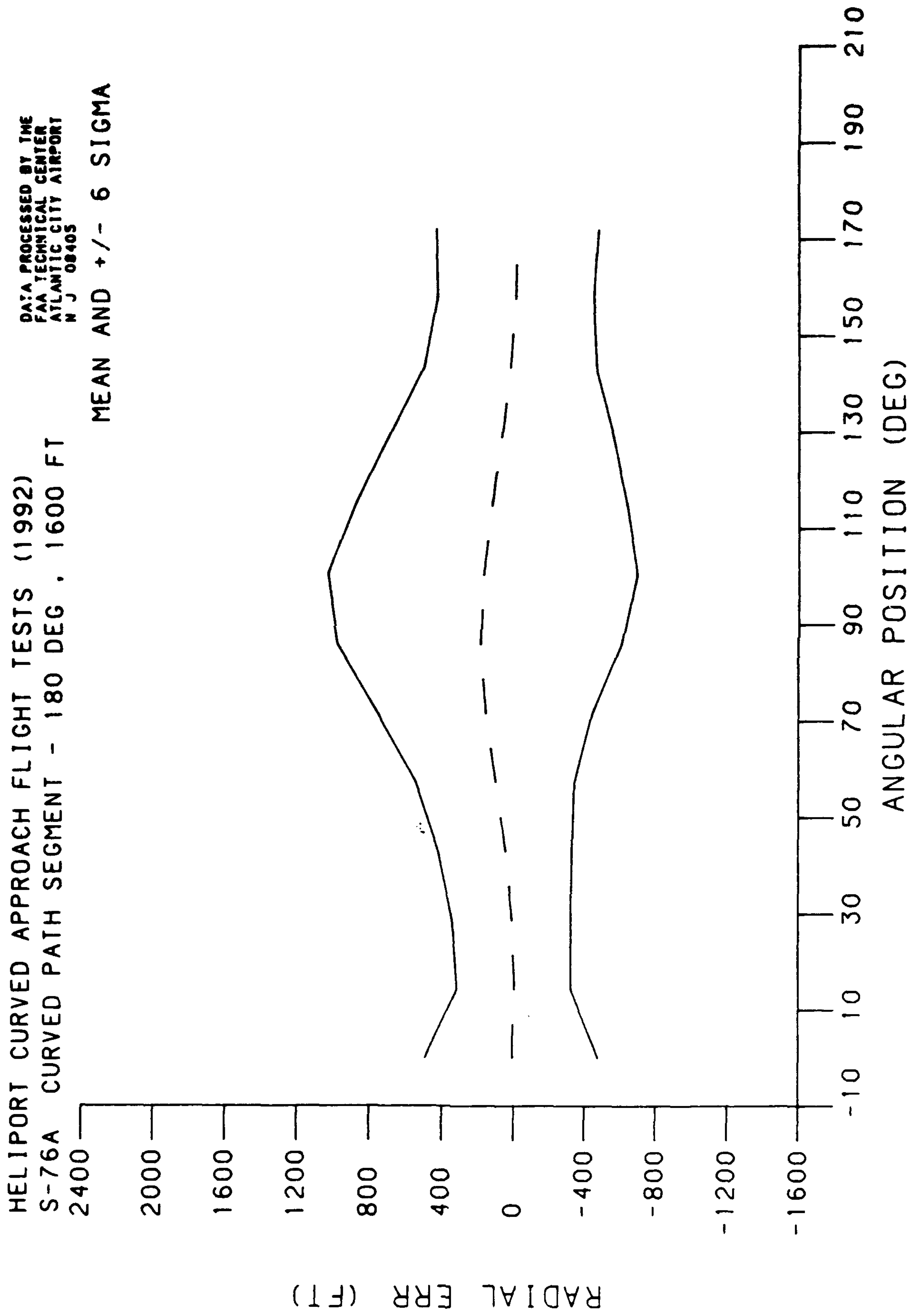


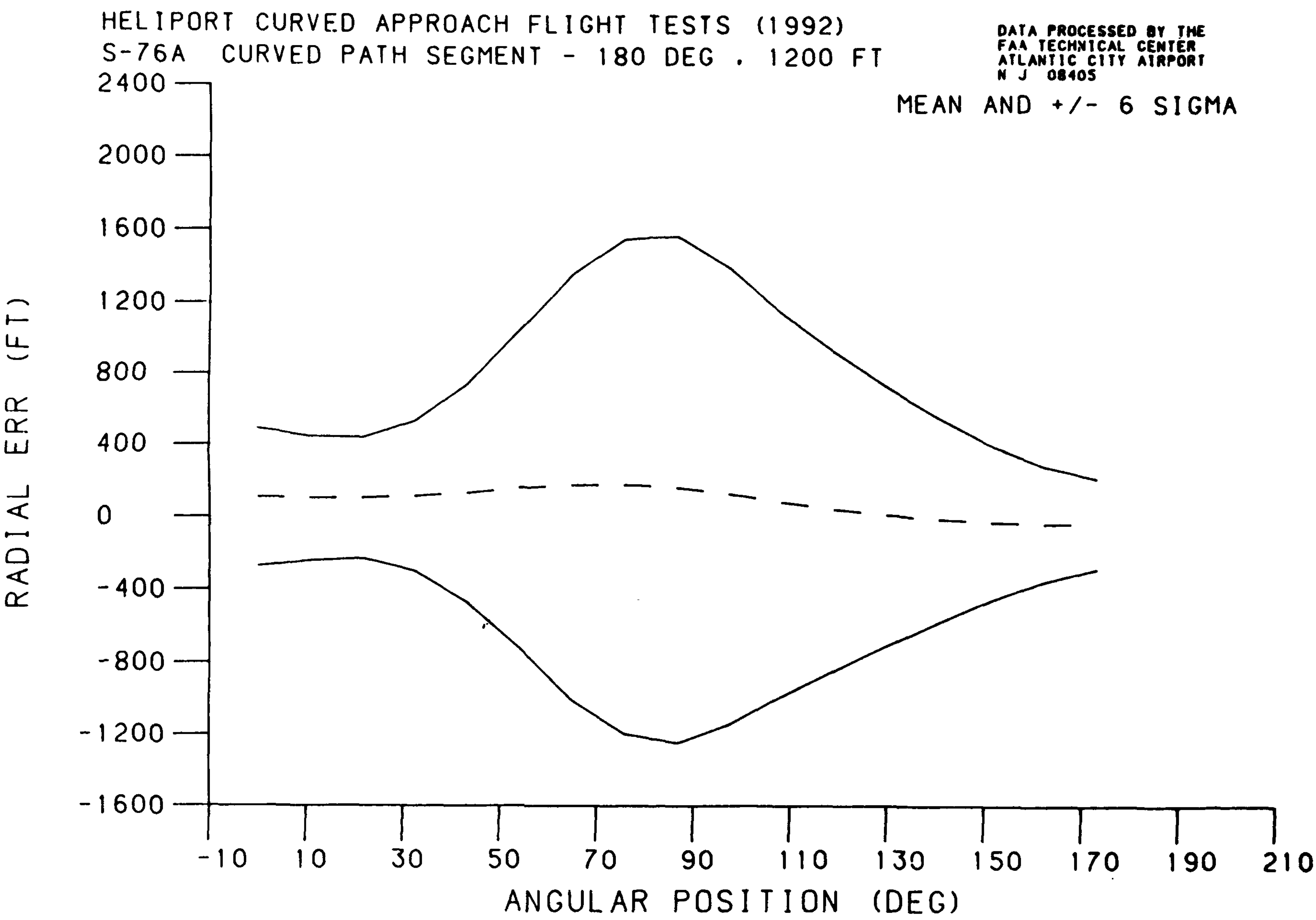
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG , 1200 FT

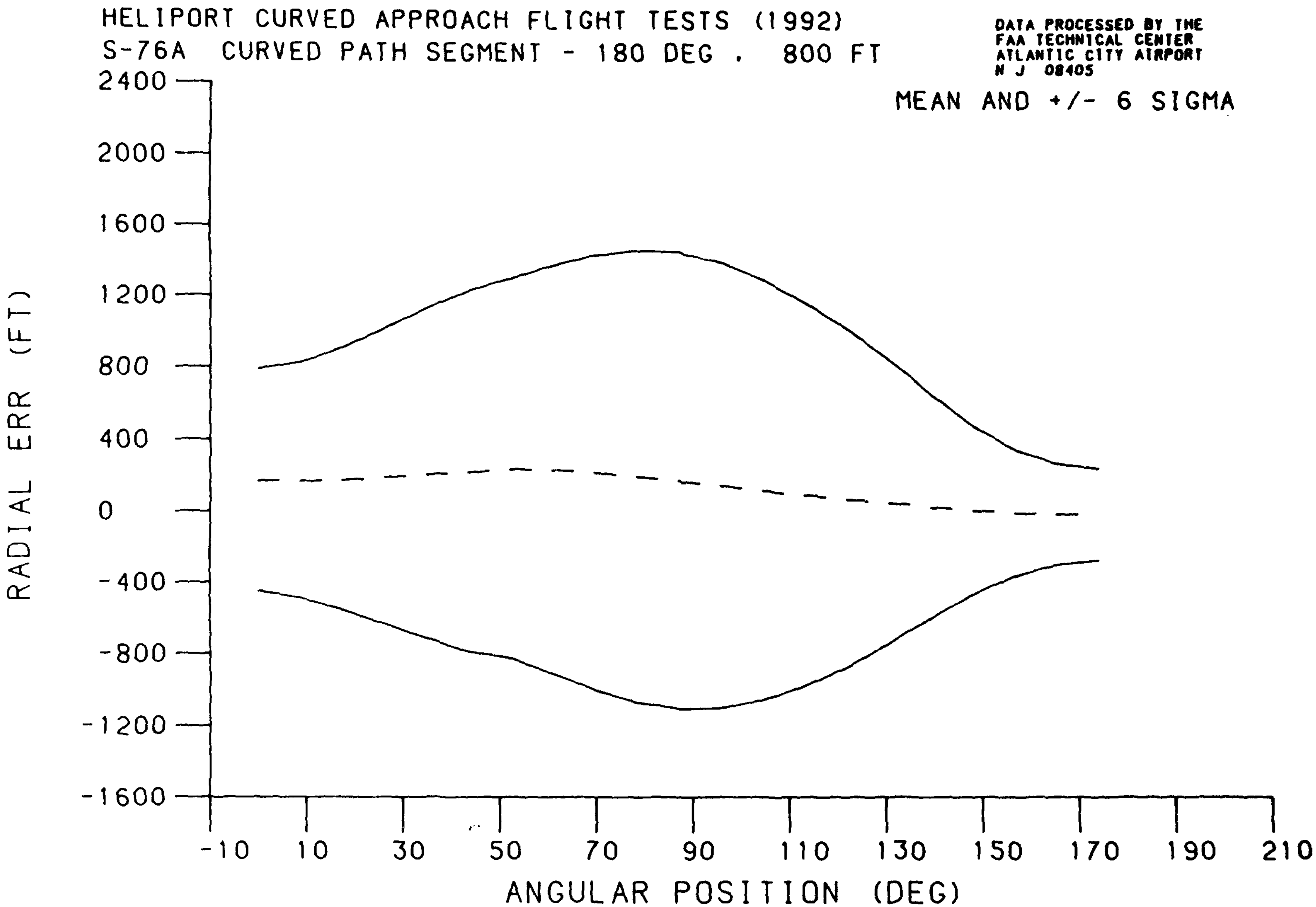
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405

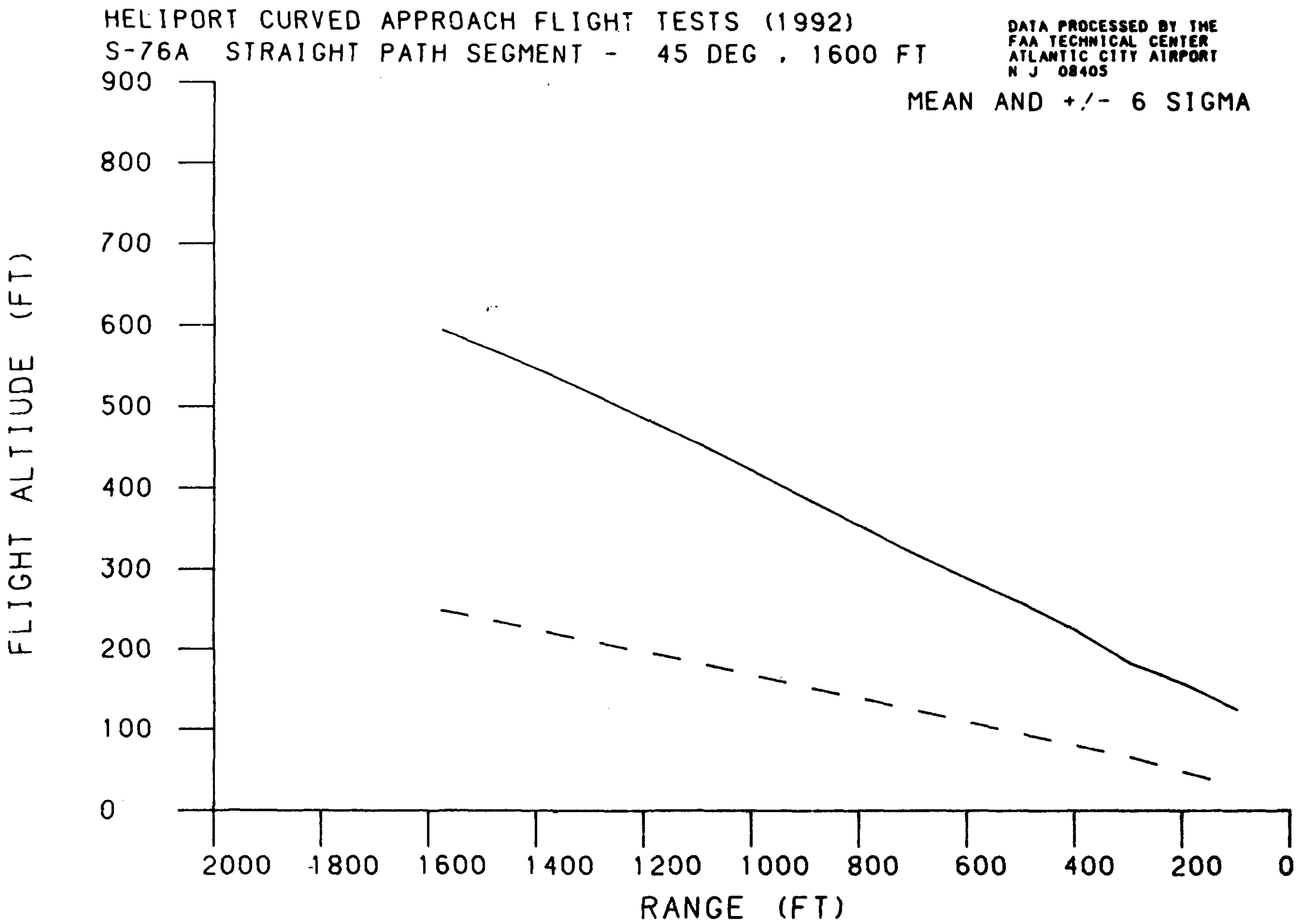


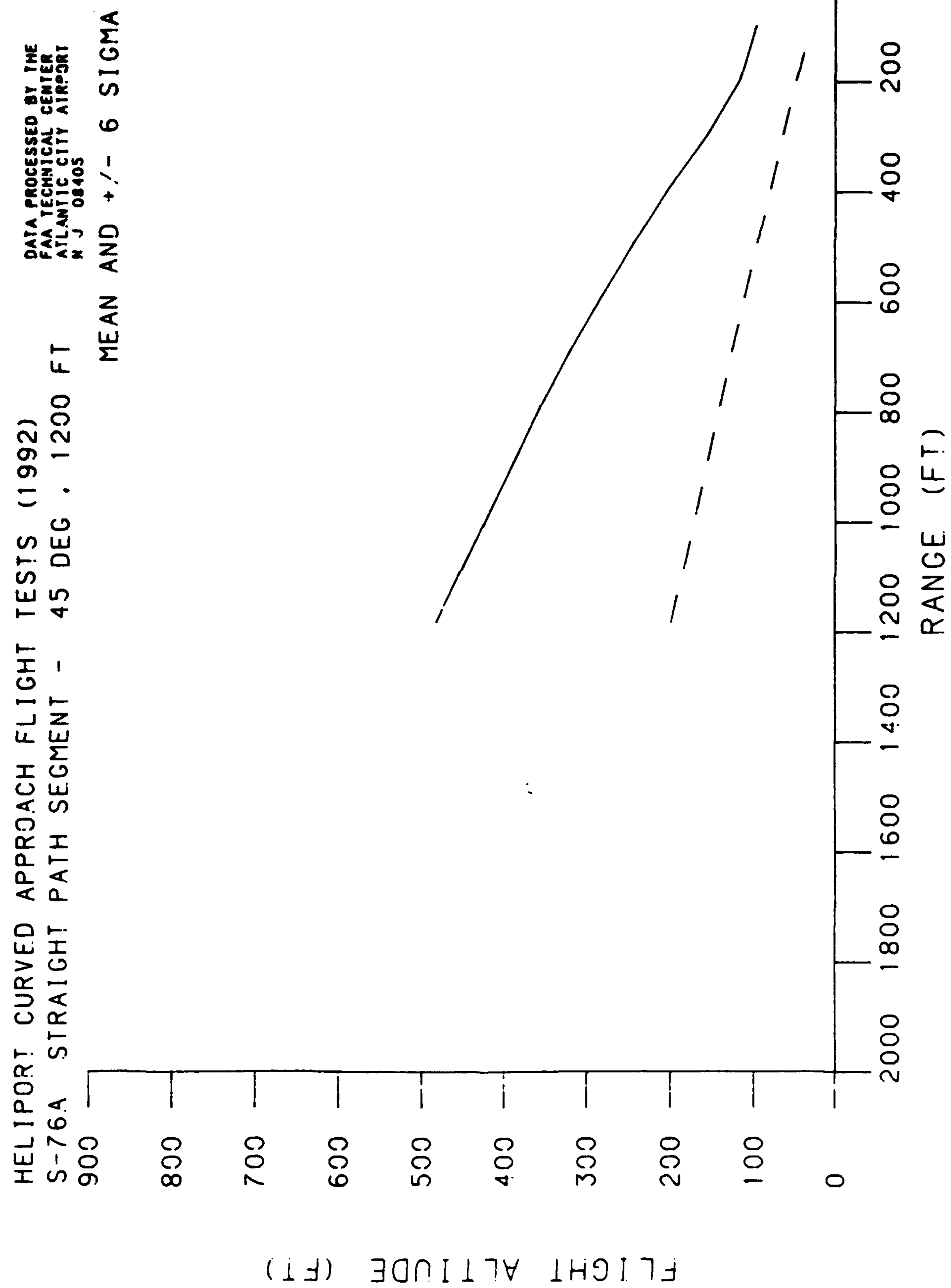

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 90 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
1000
800
600
400
200
0
-200
-400
-600
-800
-1000
RADIAL ERR (FT)
-10
0
10
20
30
40
50
60
70
80
90
100
ANGULAR POSITION (DEG)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG , 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
2400
2000
1600
1200
800
400
0
-400
-800
-1200
-1600
RADIAL ERR (FT)
-10
10
30
50
70
90
110
130
150
170
190
210
ANGULAR POSITION (DEG)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG . 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
RADIAL ERR (FT)
2400
2000
1600
1200
800
400
0
-400
-800
-1200
-1600
-10
10
30
50
70
90
110
130
150
170
190
210
ANGULAR POSITION (DEG)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A CURVED PATH SEGMENT - 180 DEG . 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
2400
2000
1600
1200
800
400
0
-400
-800
-1200
-1600
RADIAL ERR (FT)
-10
10
30
50
70
90
110
130
150
170
190
210
ANGULAR POSITION (DEG)

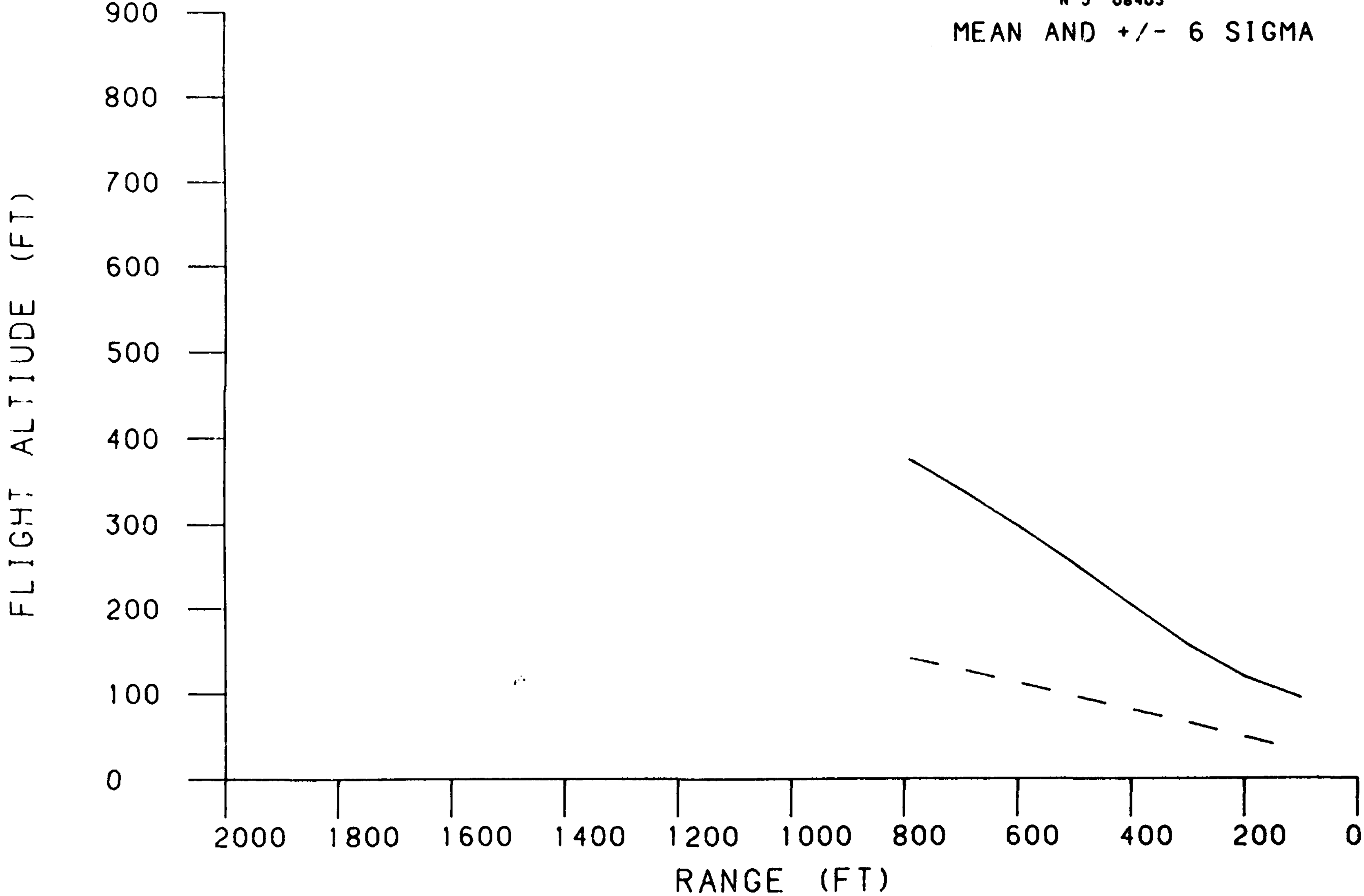

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 45 DEG , 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
FLIGHT ALTITUDE (FT)
900
800
700
600
500
400
300
200
100
0
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)

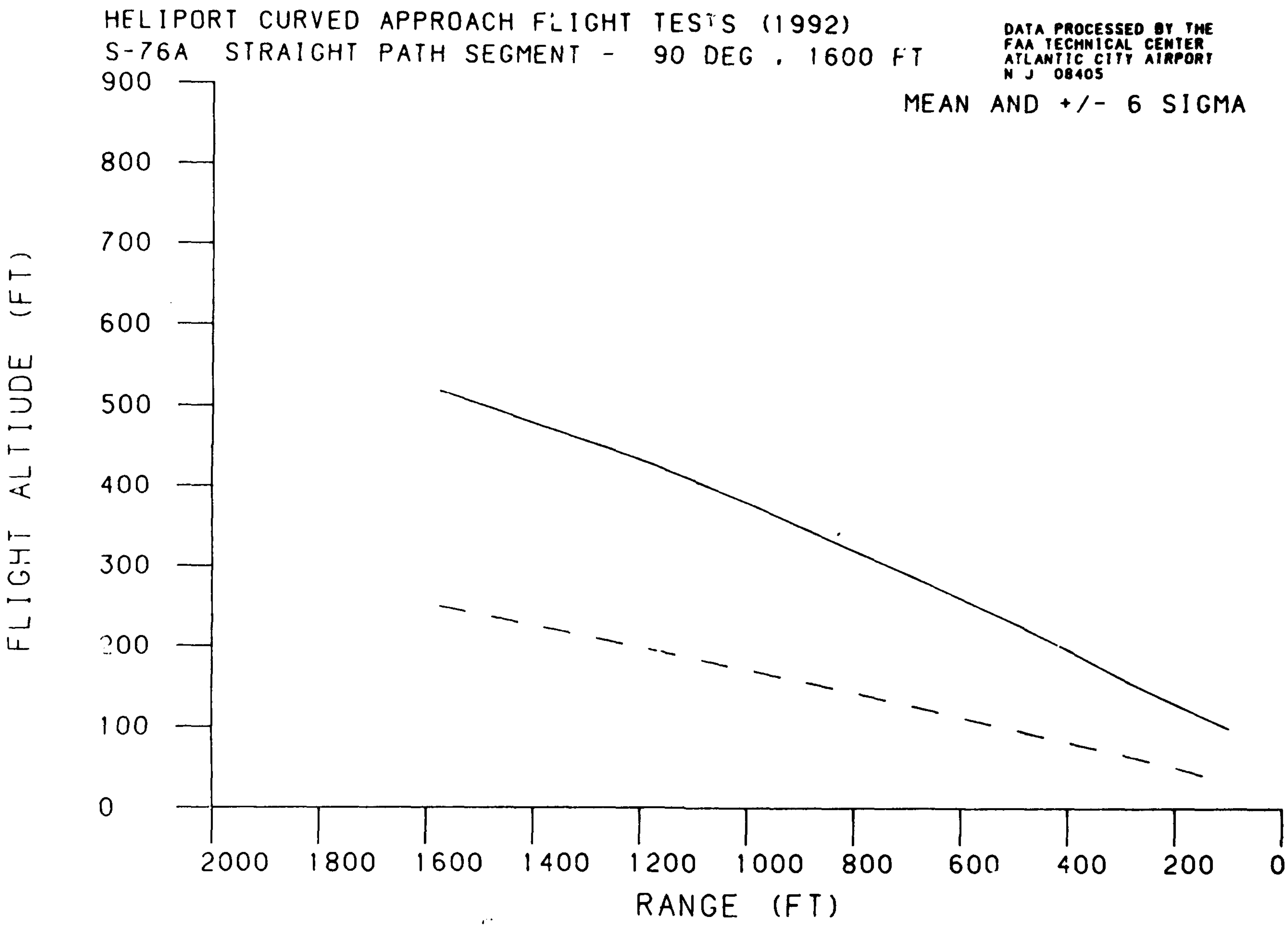

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 45 DEG , 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
FLIGHT ALTITUDE (FT)
RANGE (FT)
0
100
200
300
400
500
600
700
800
900
1000
1200
1400
1600
1800
2000

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)

S-76A STRAIGHT PATH SEGMENT - 45 DEG , 800 FT

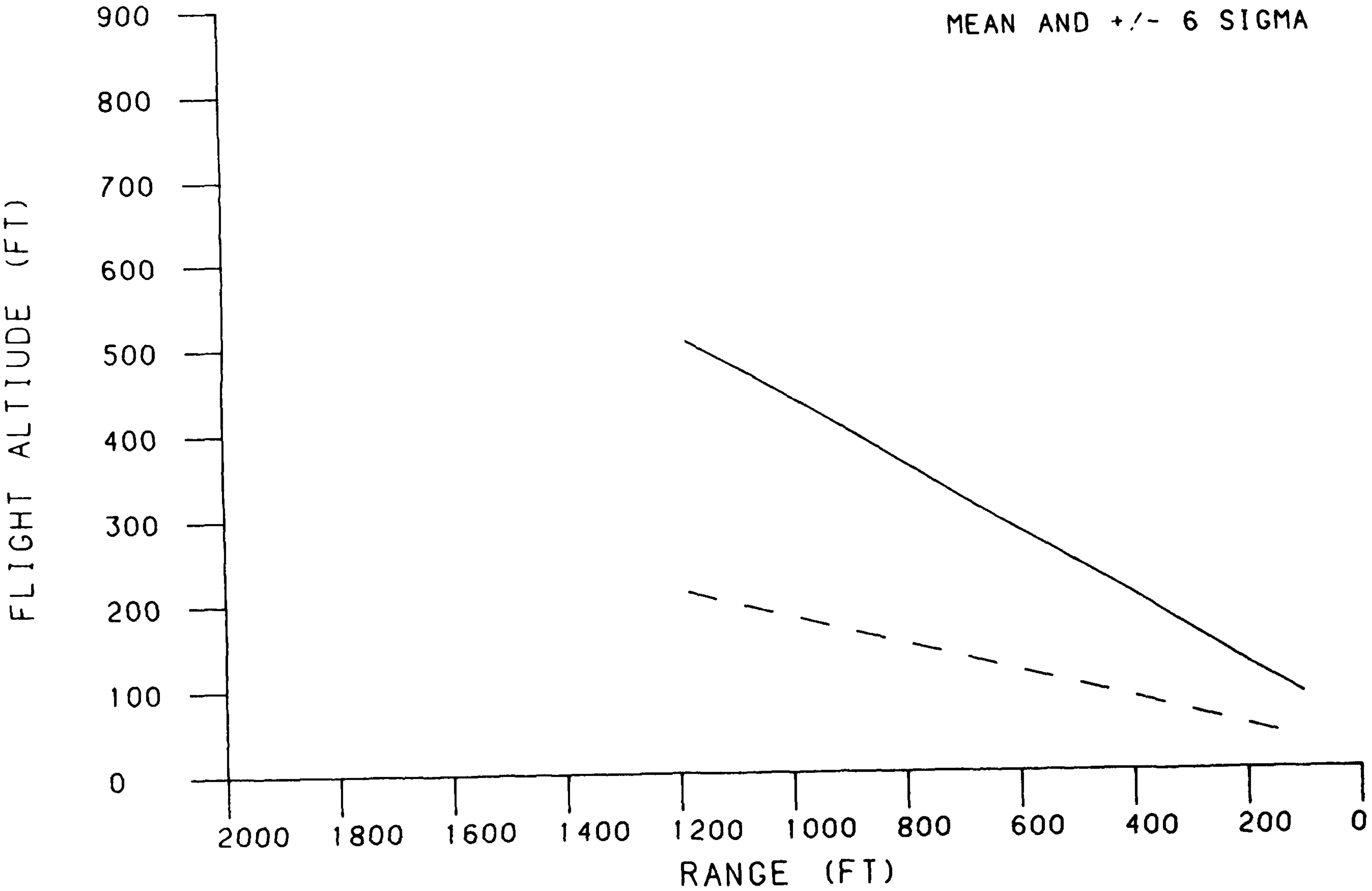
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405




HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 90 DEG , 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
FLIGHT ALTITUDE (FT)
900
800
700
600
500
400
300
200
100
0
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)

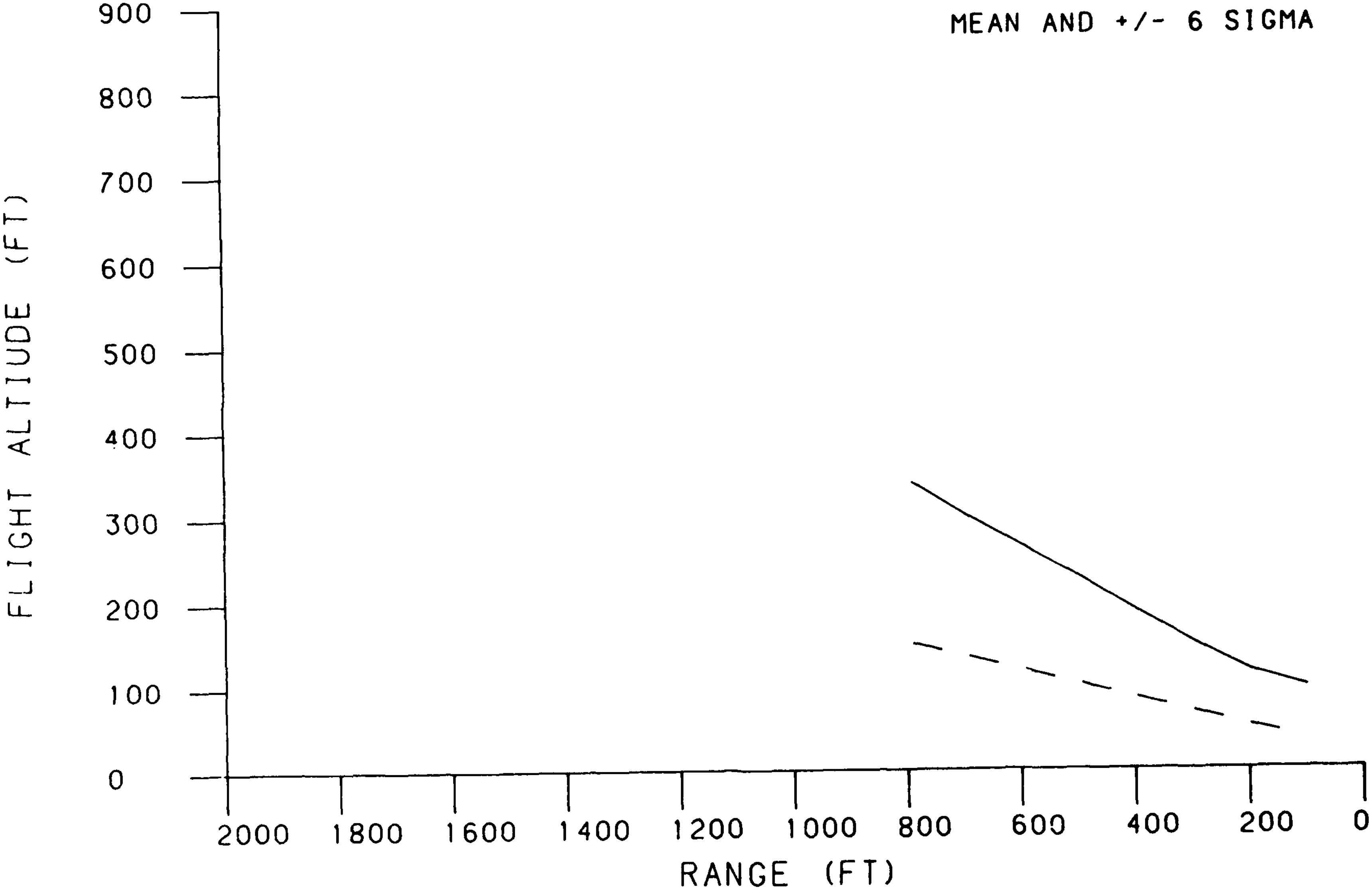
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 90 DEG , 1200 FT

DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405



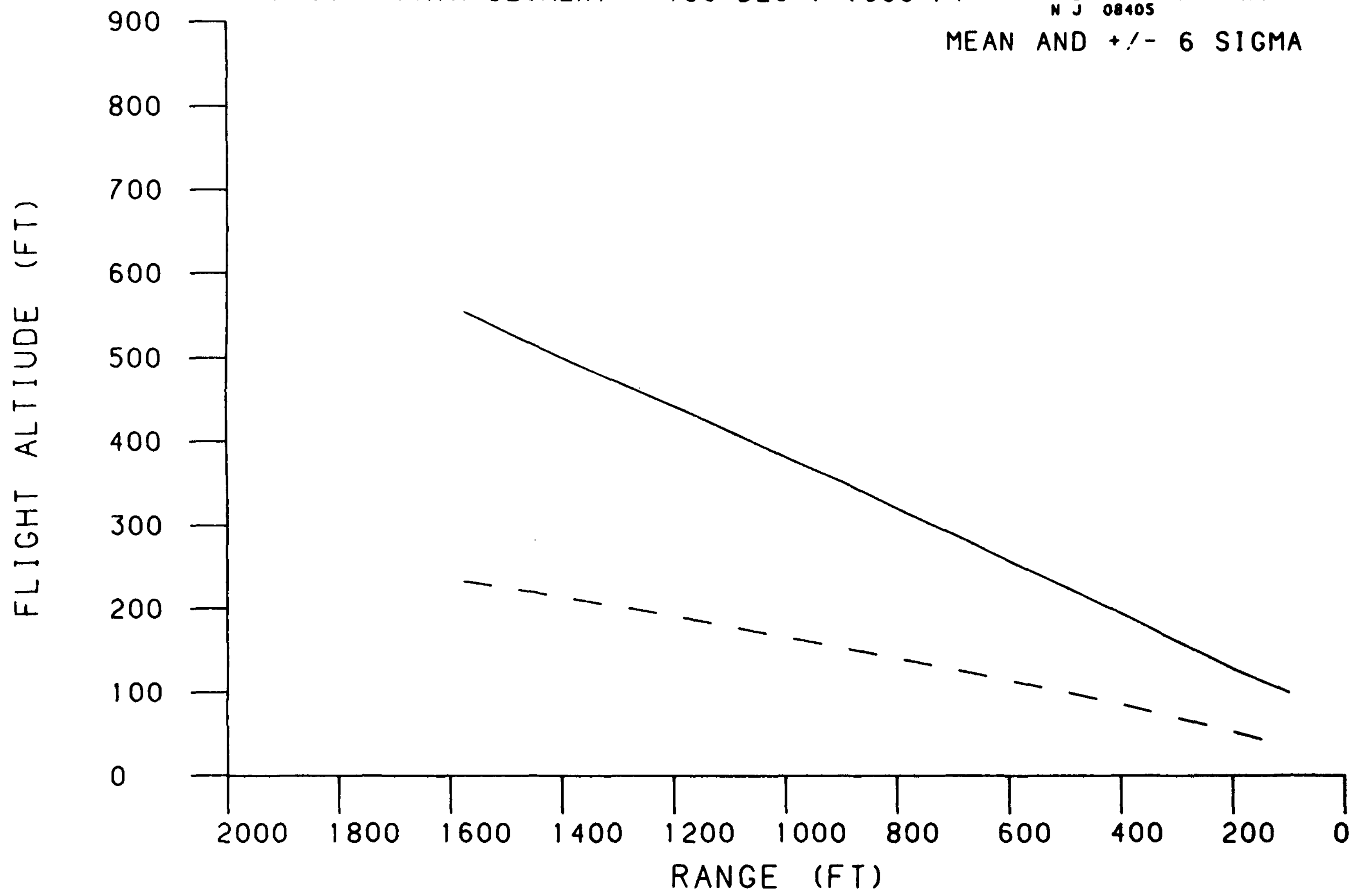
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 90 DEG , 800 FT

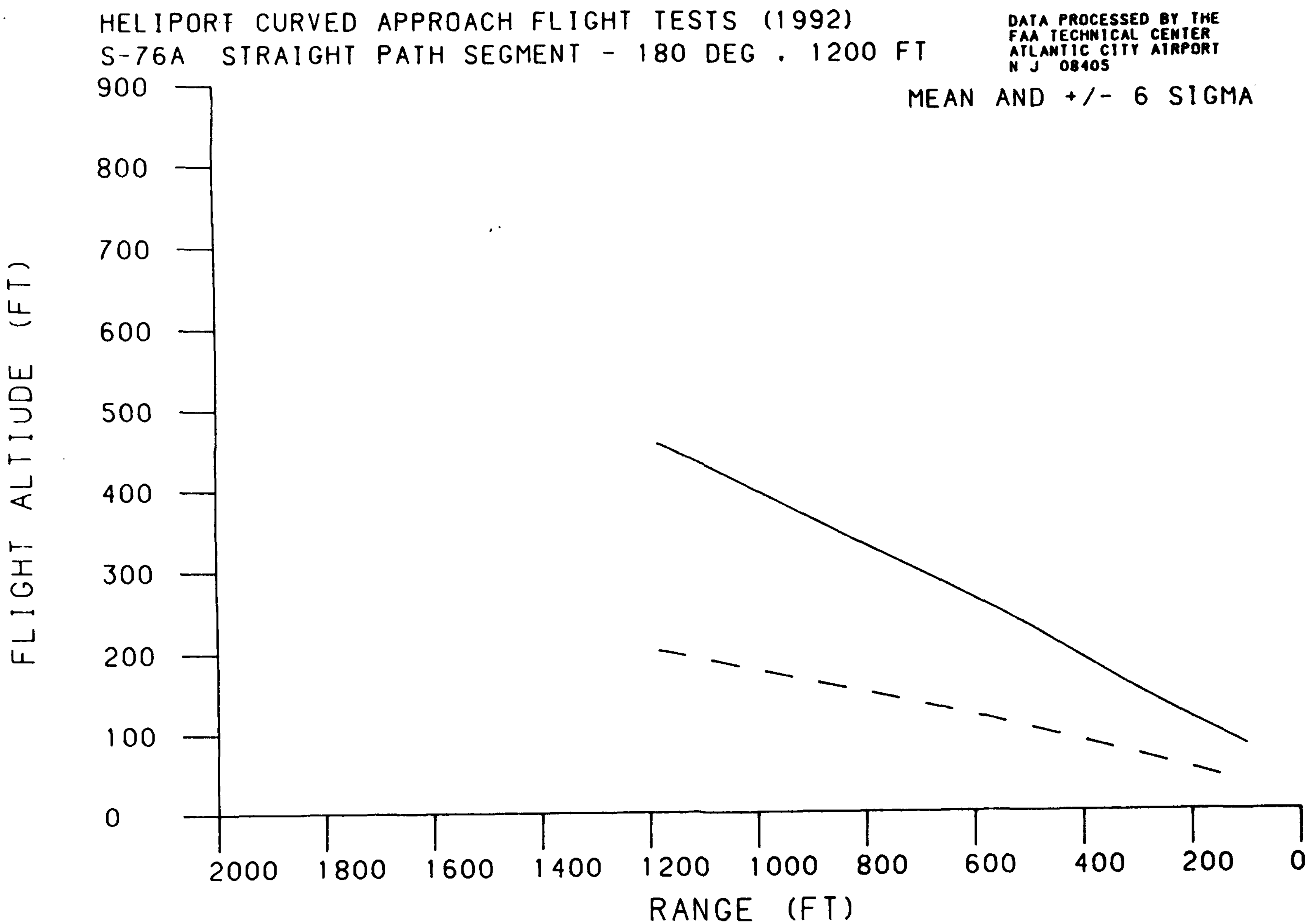
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405



HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 180 DEG , 1600 FT

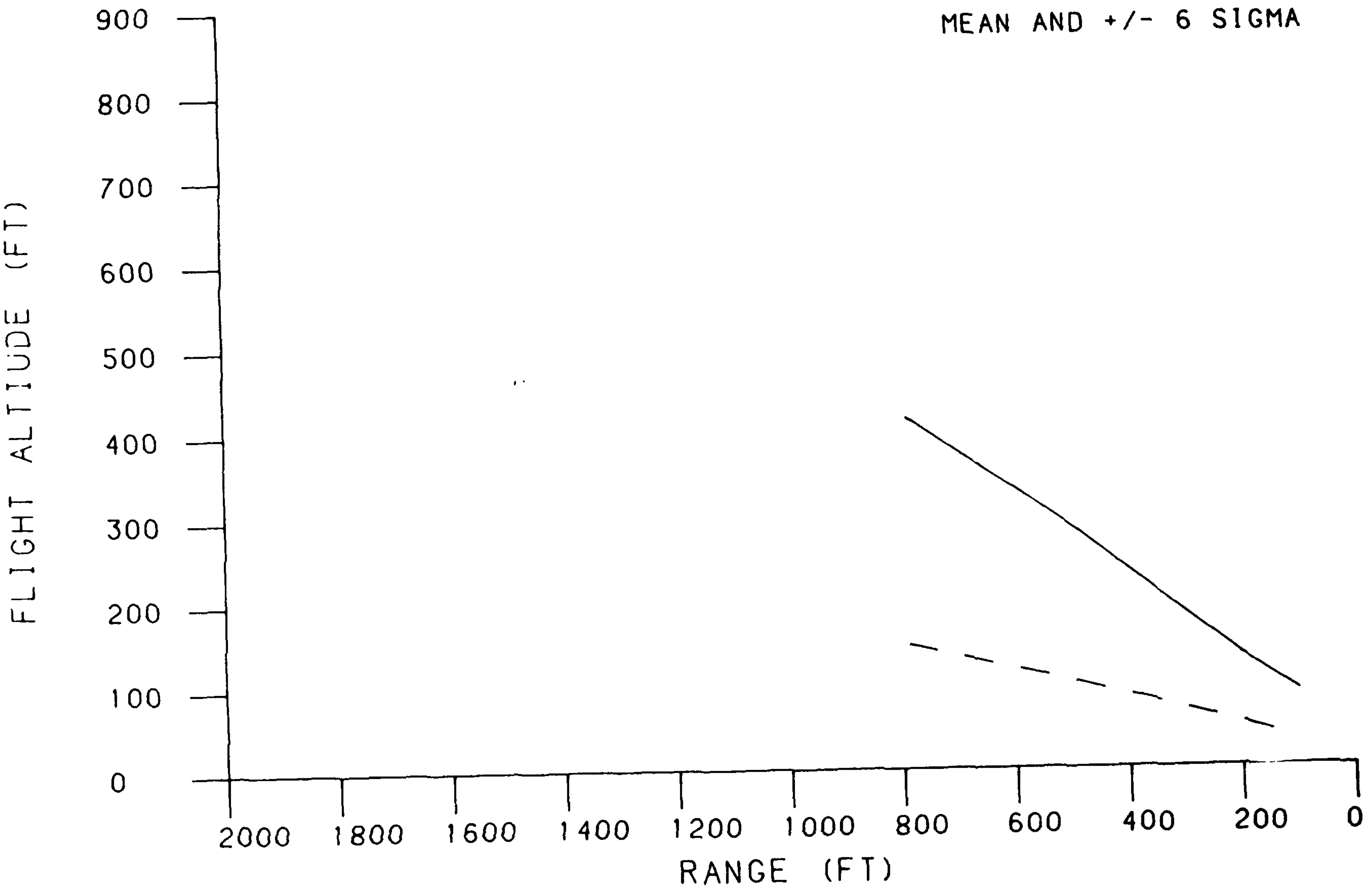
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405




HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 180 DEG , 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
FLIGHT ALTITUDE (FT)
900
800
700
600
500
400
300
200
100
0
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 180 DEG , 800 FT

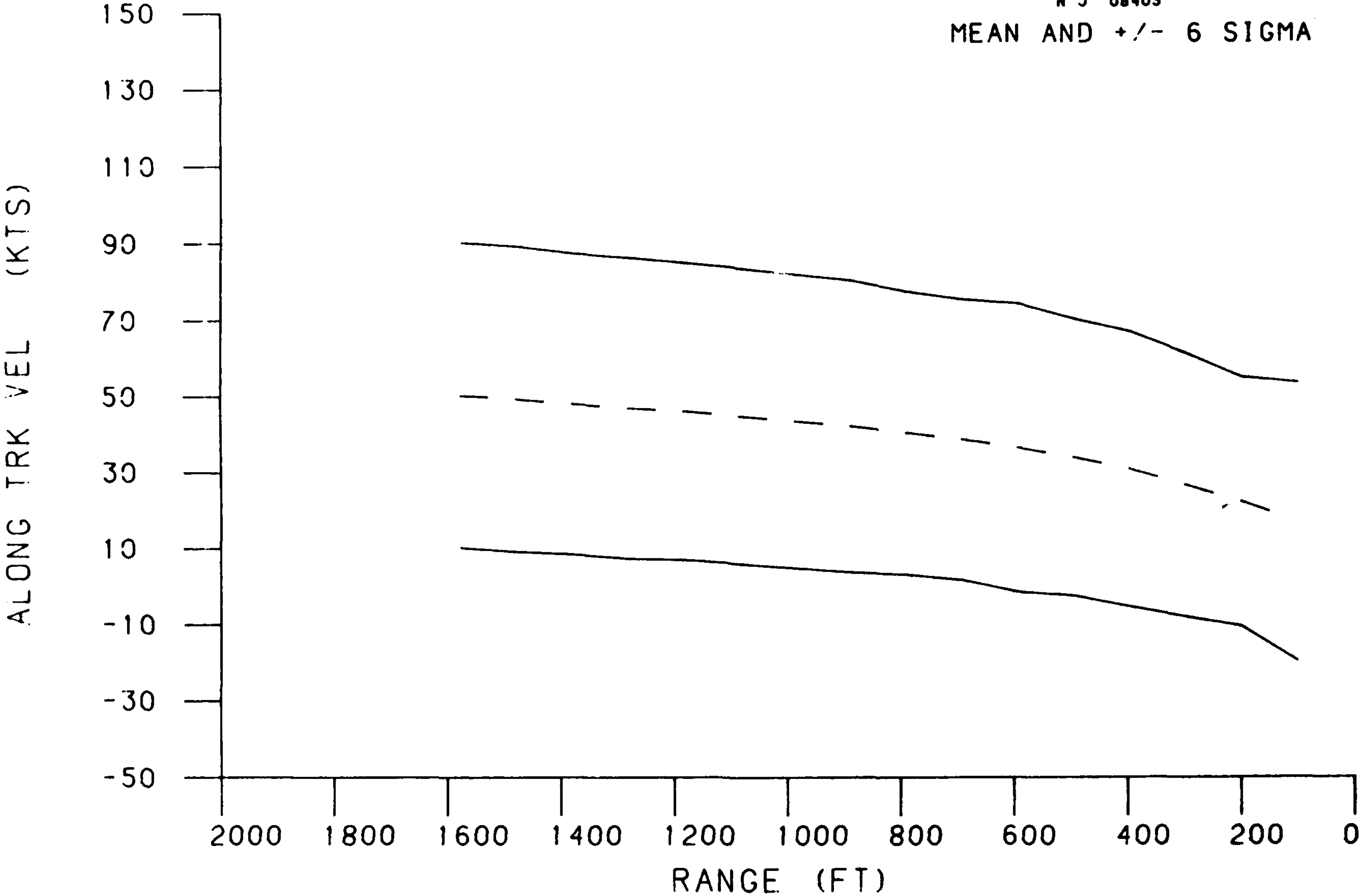
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405



HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 45 DEG , 1600 FT

DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405

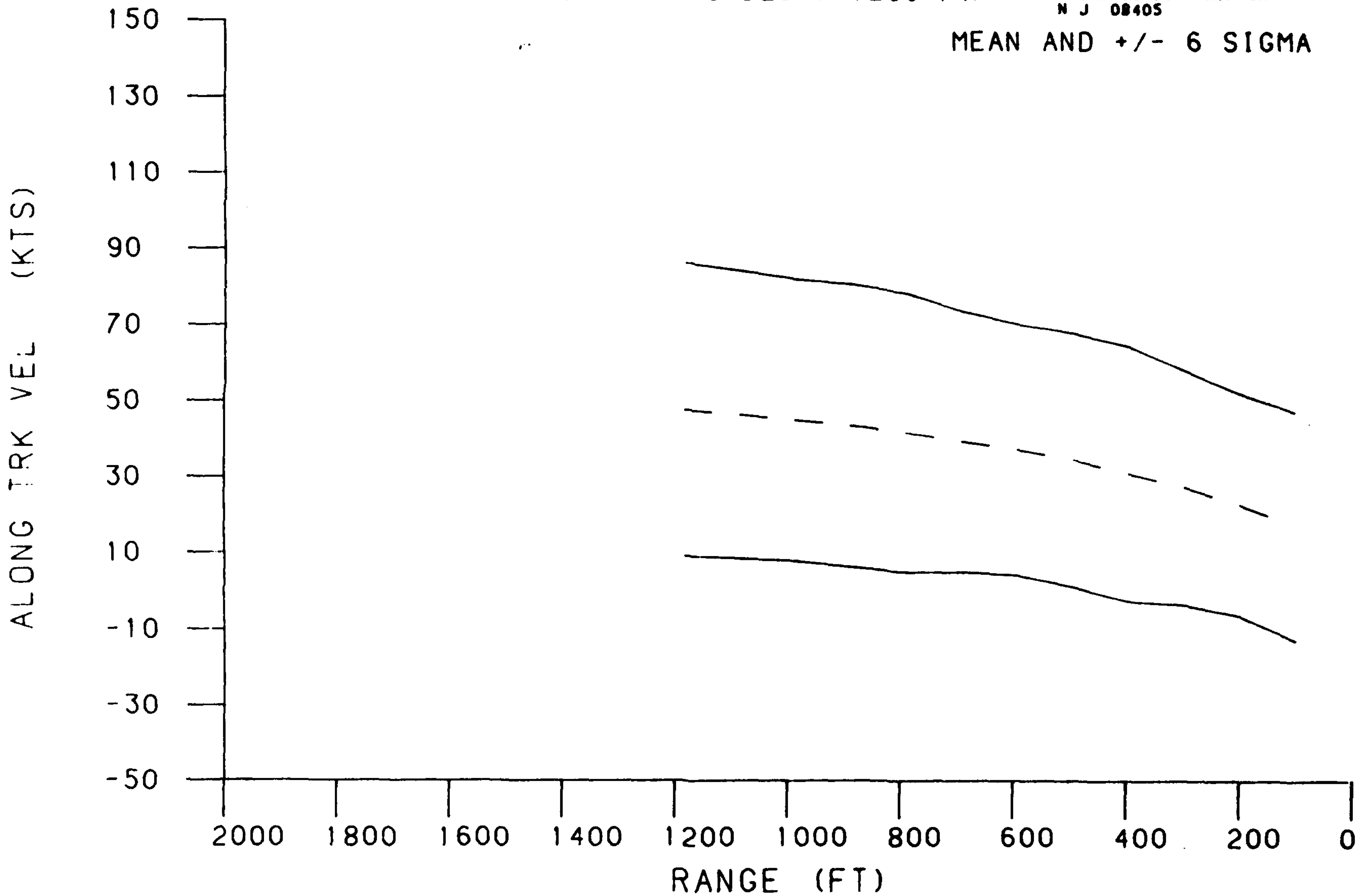
MEAN AND +/- 6 SIGMA



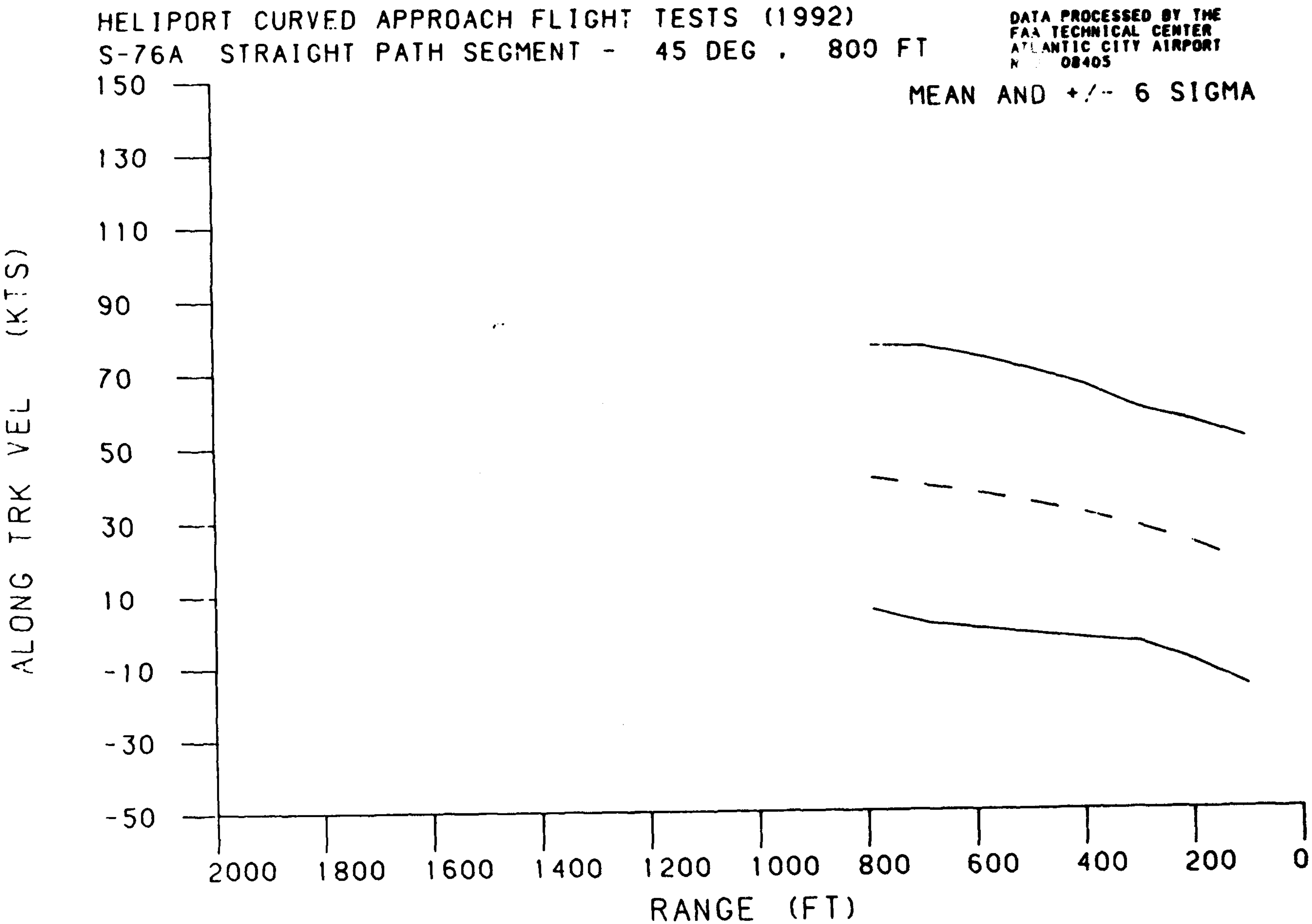
HELIPORT CURVED APPROACH FLIGHT TESTS (1992
S-76A STRAIGHT PATH SEGMENT - 45 DEG , 1200 FT.

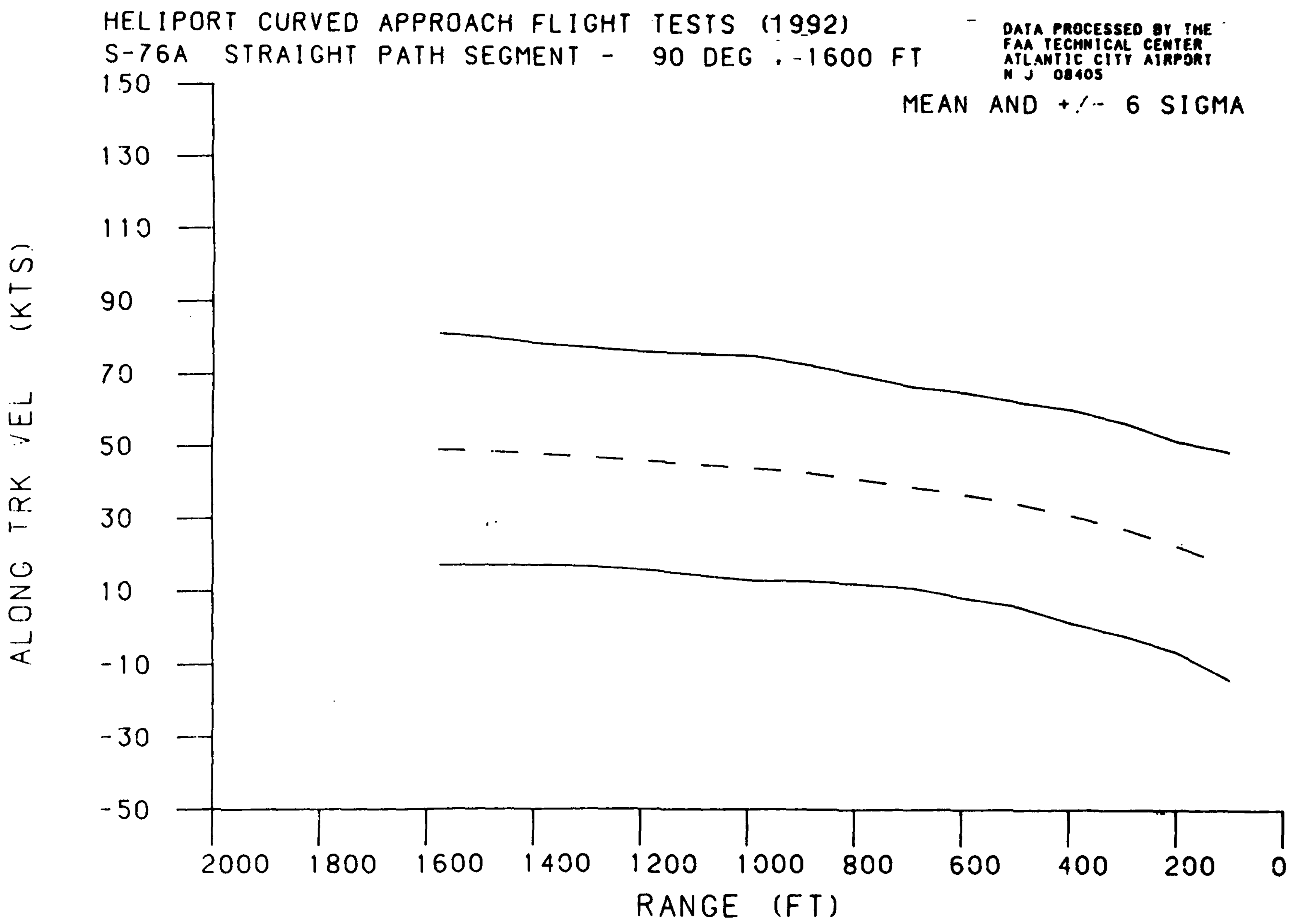
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405

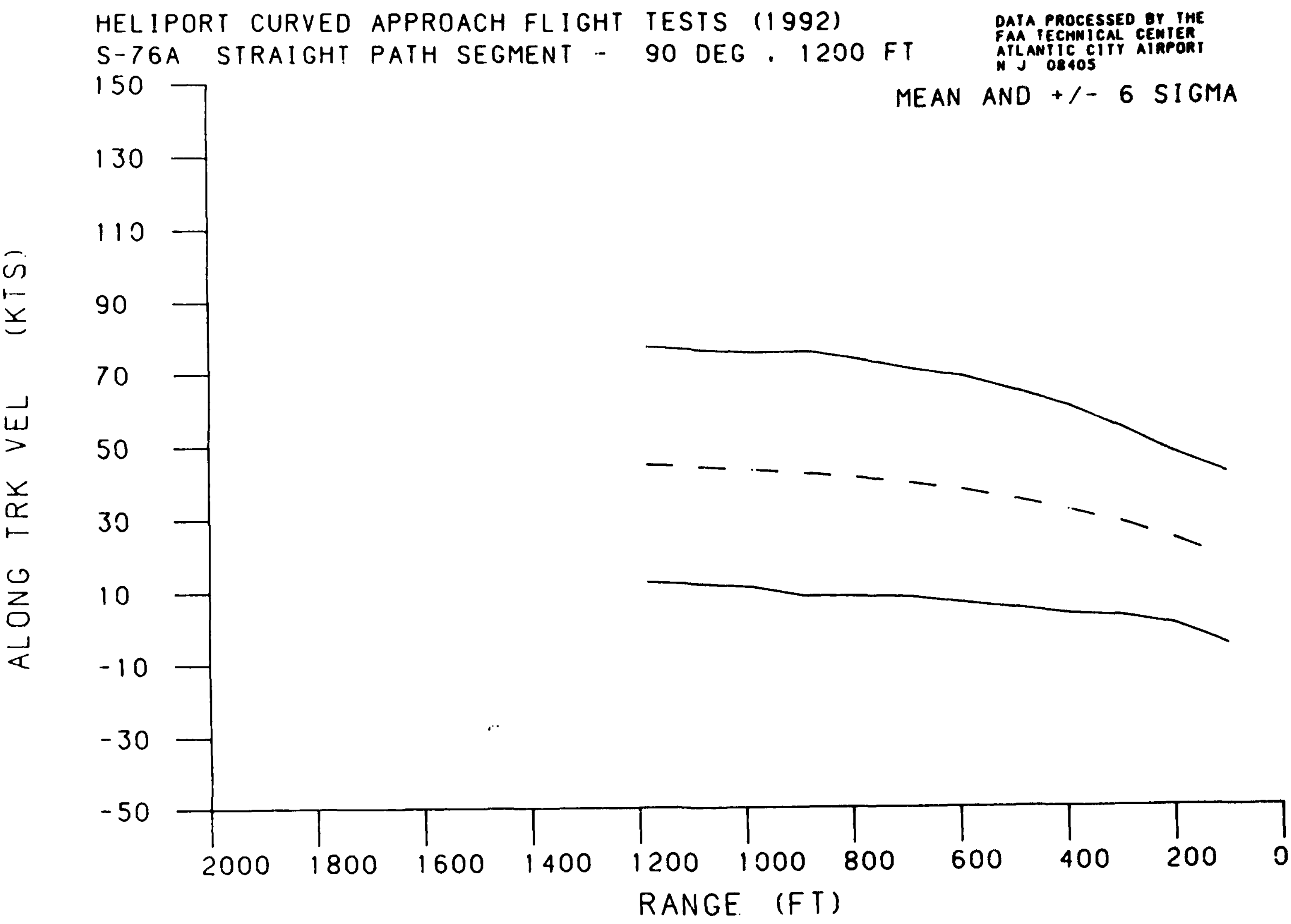
MEAN AND +/- 6 SIGMA



HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 45 DEG , 800 FT

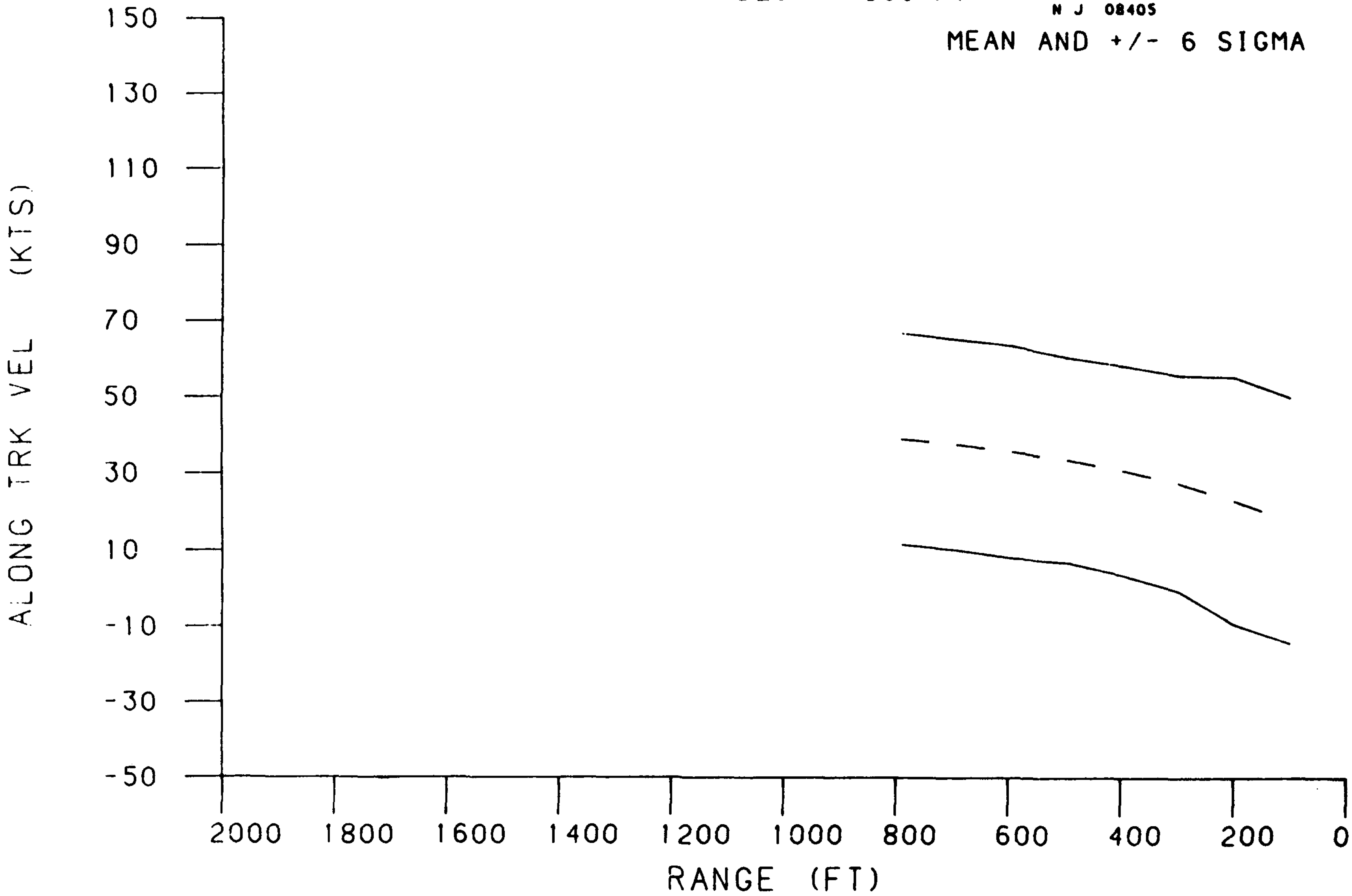



HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 90 DEG , -1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
ALONG TRK VEL (KTS)
150
130
110
90
70
50
30
10
-10
-30
-50
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 90 DEG . 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
150
130
110
90
70
50
30
10
-10
-30
-50
ALONG TRK VEL (KTS)
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)

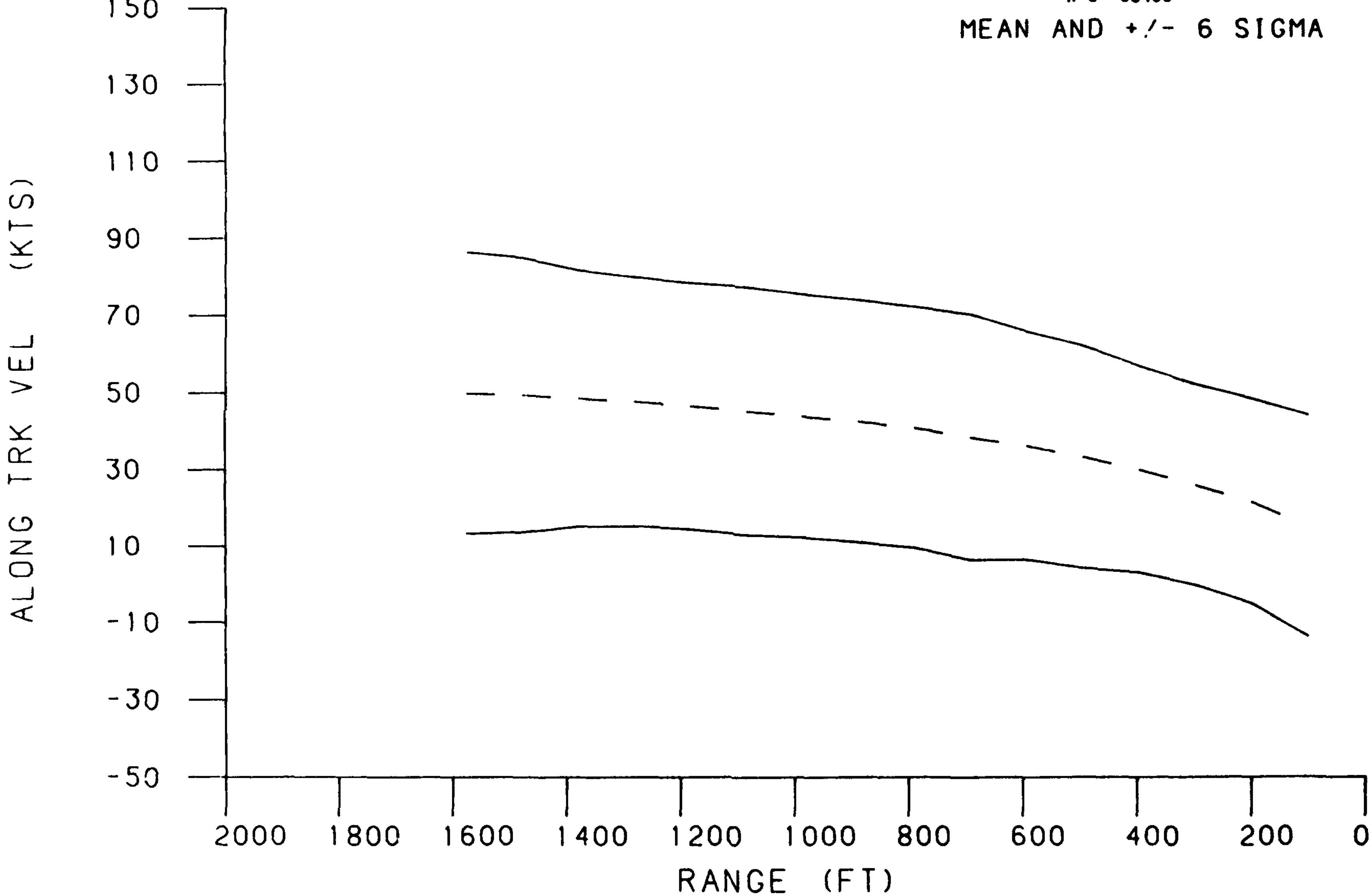
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 90 DEG . 800 FT

DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405



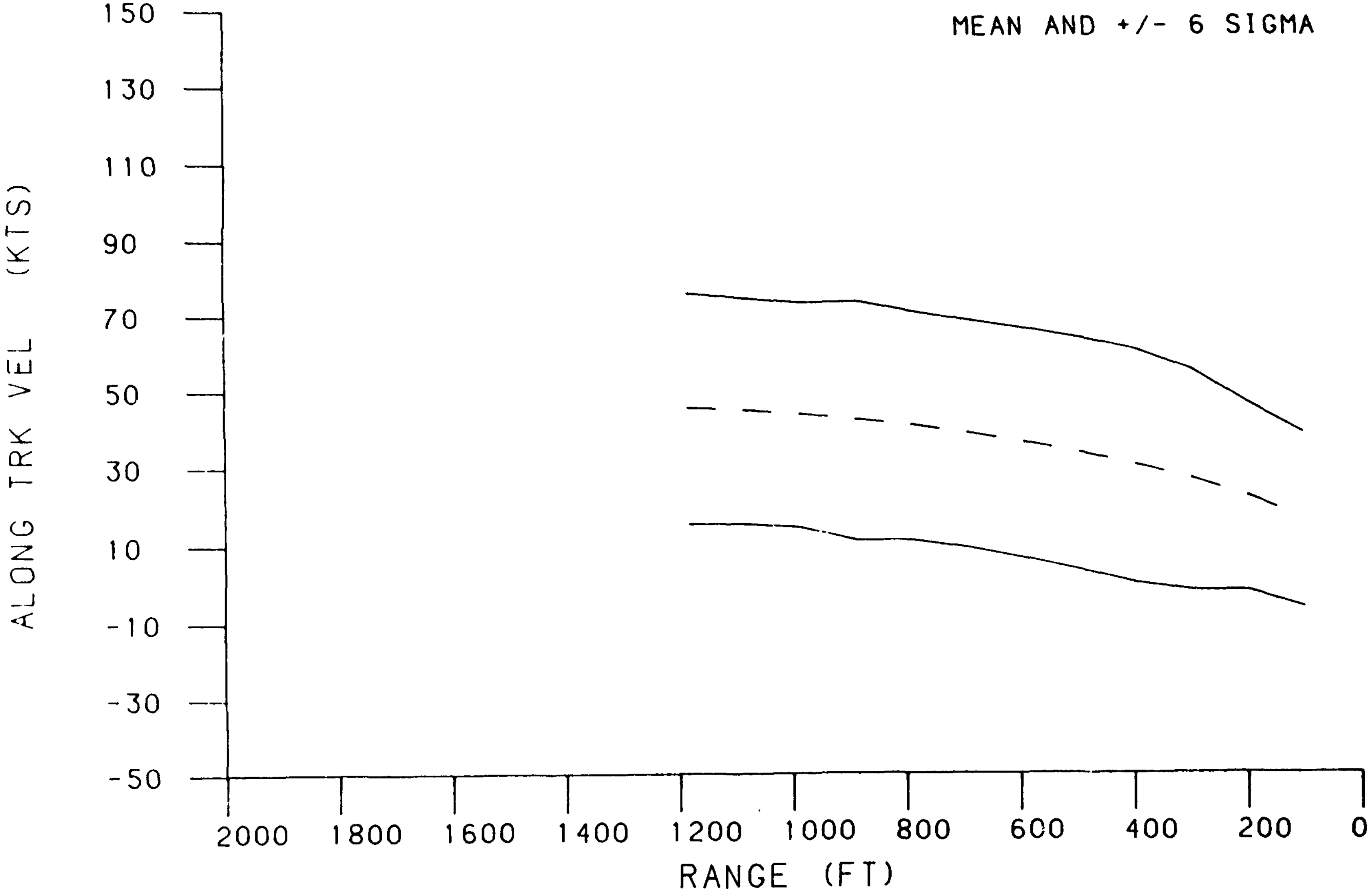
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 180 DEG , 1600 FT

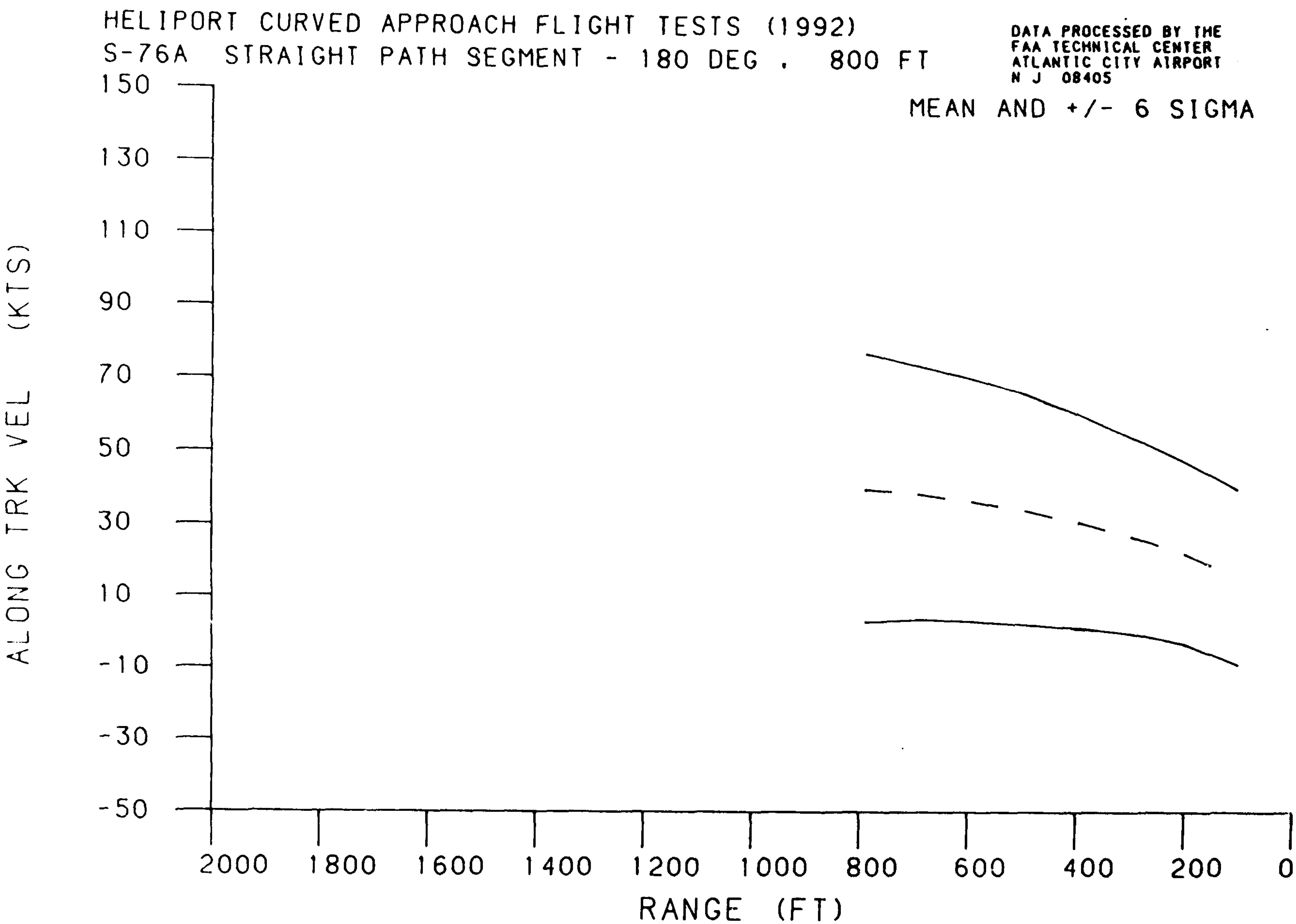
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405

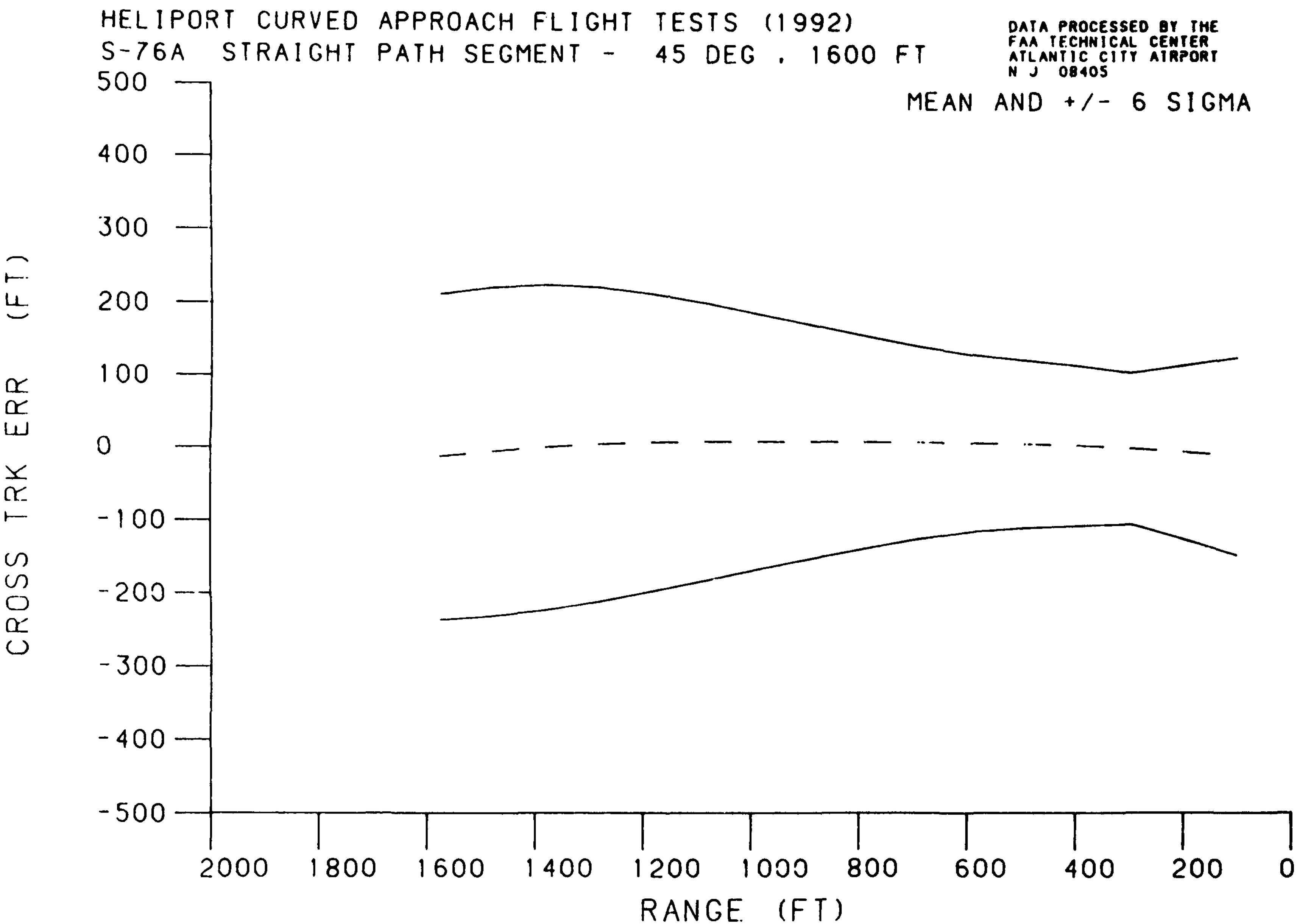


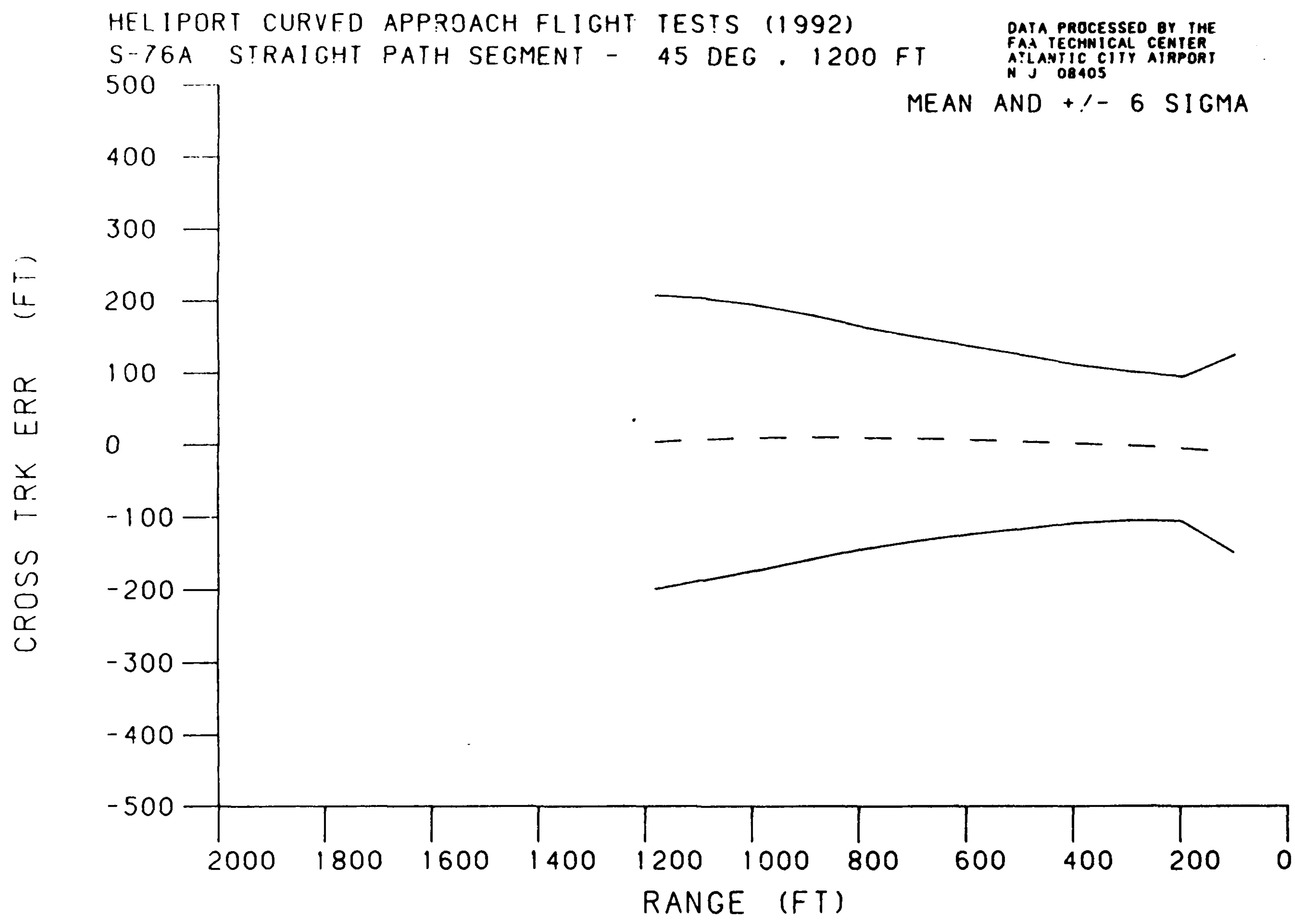
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 180 DEG . 1200 FT

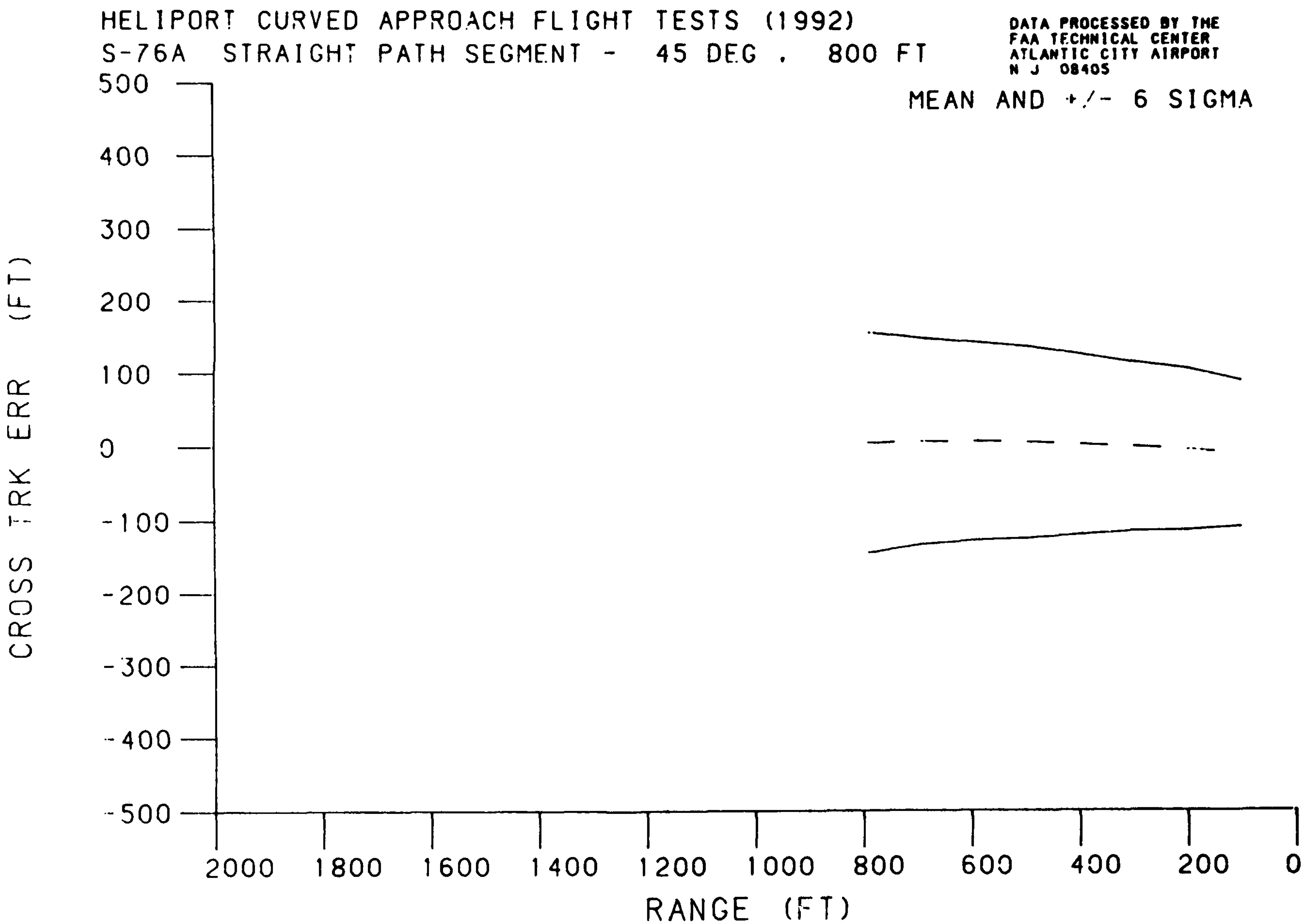
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405

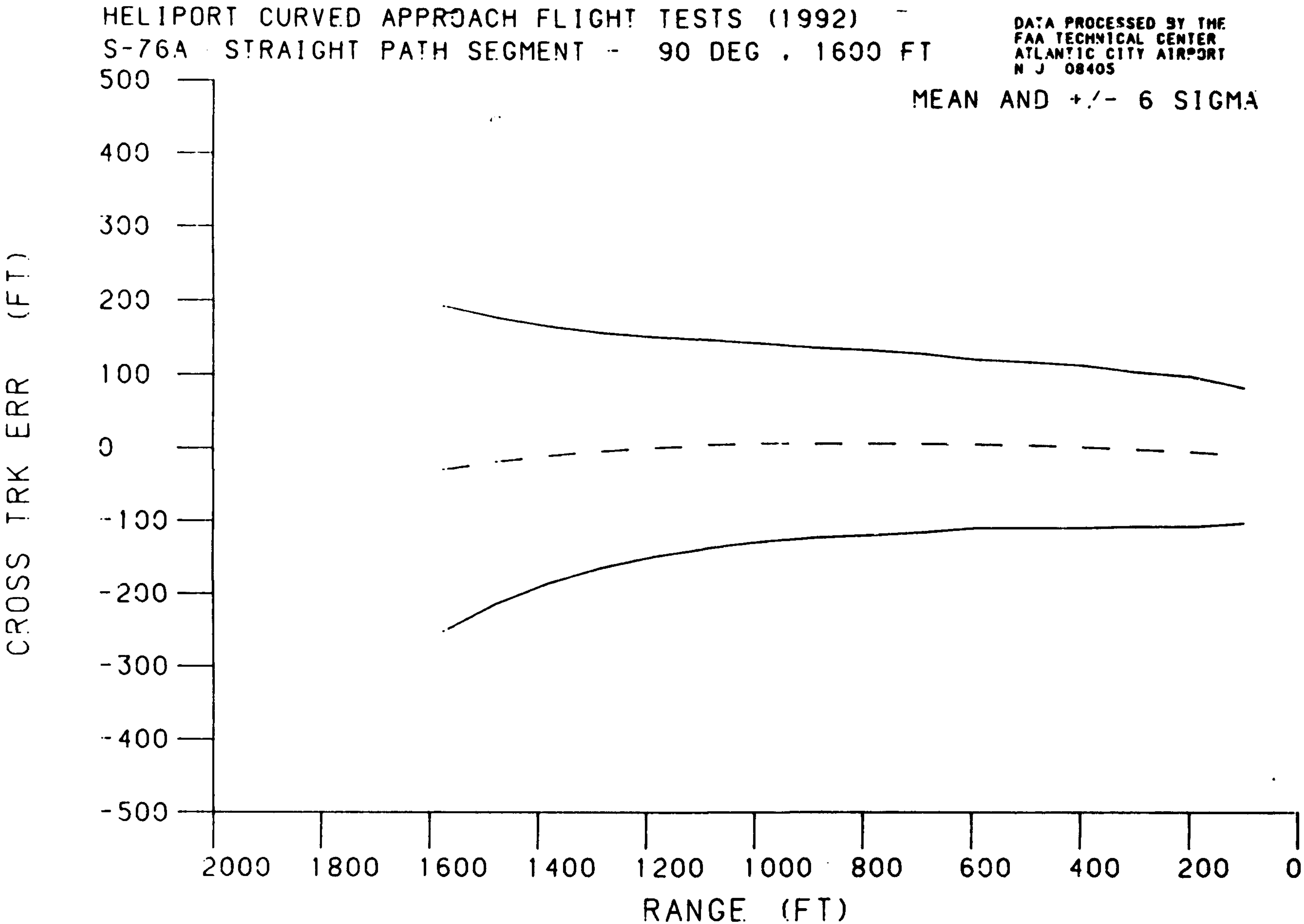


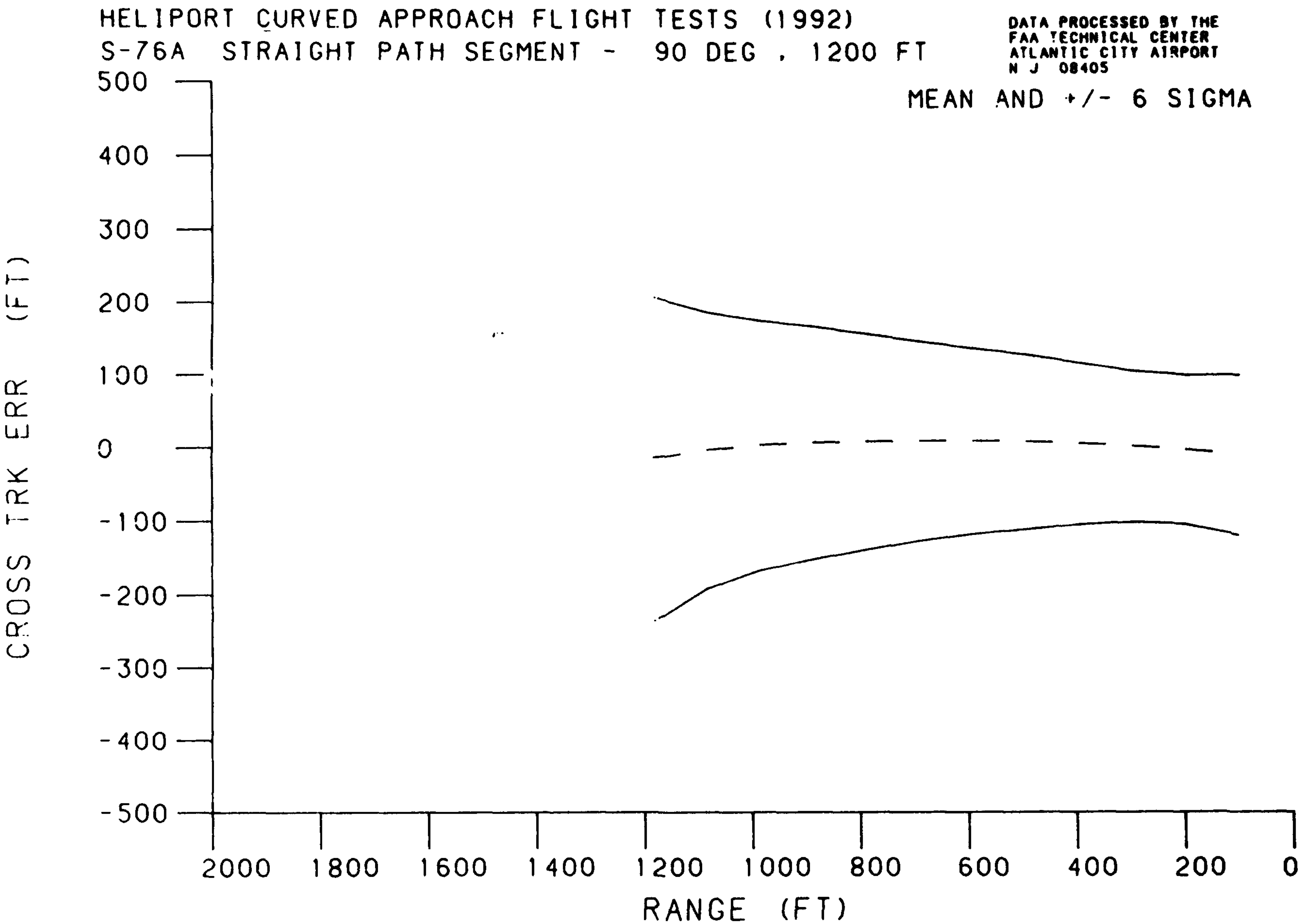

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 180 DEG . 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
ALONG TRK VEL (KTS)
150
130
110
90
70
50
30
10
-10
-30
-50
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)

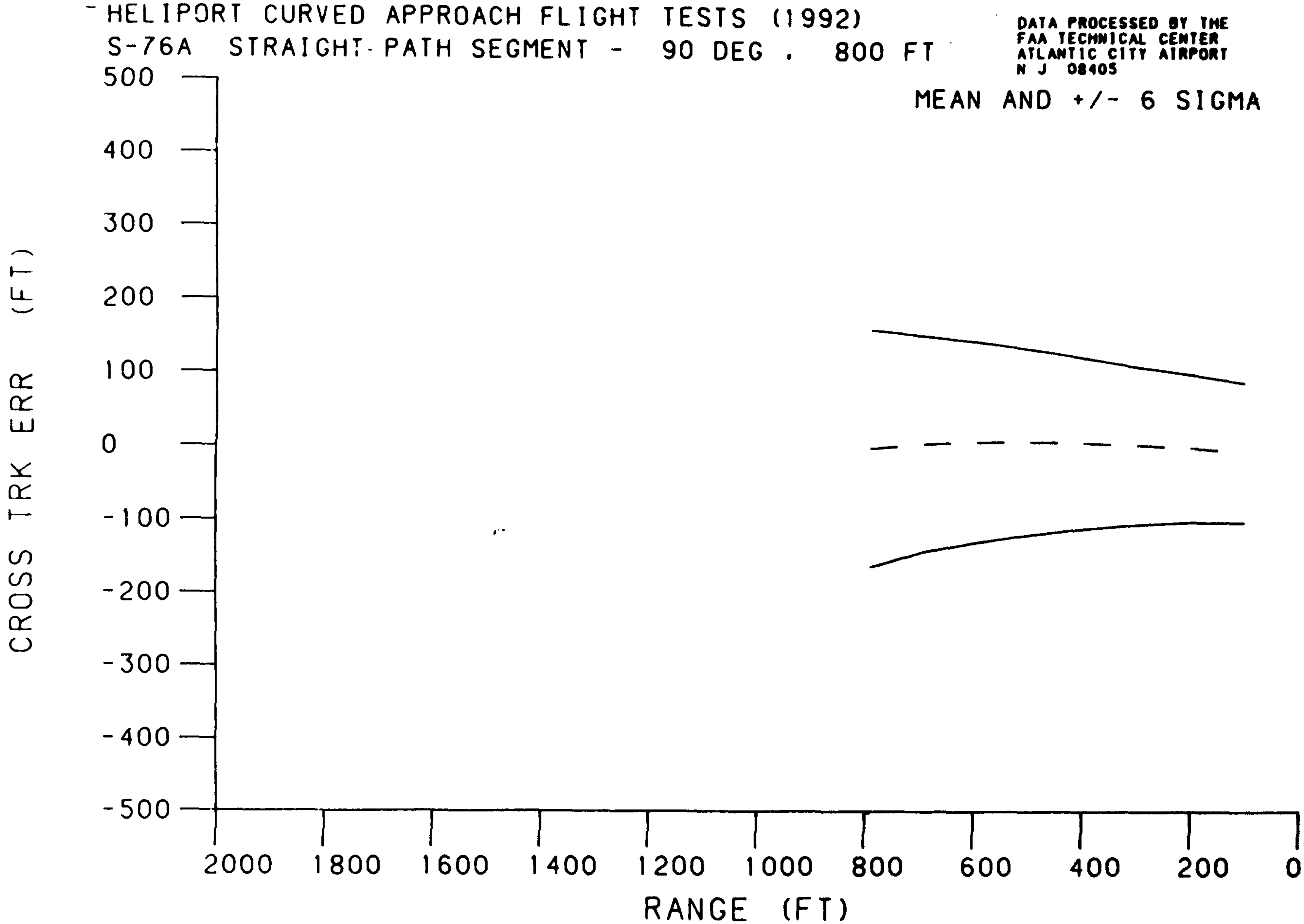

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 45 DEG , 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
CROSS TRK ERR (FT)
500
400
300
200
100
0
-100
-200
-300
-400
-500
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 45 DEG , 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
CROSS TRK ERR (FT)
500
400
300
200
100
0
-100
-200
-300
-400
-500
2000 1800 1600 1400 1200 1000 800 600 400 200 0
RANGE (FT)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 45 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
CROSS TRK ERR (FT)
500
400
300
200
100
0
-100
-200
-300
-400
-500
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992) -
S-76A STRAIGHT PATH SEGMENT - 90 DEG , 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
CROSS TRK ERR (FT)
500
400
300
200
100
0
-100
-200
-300
-400
-500
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)

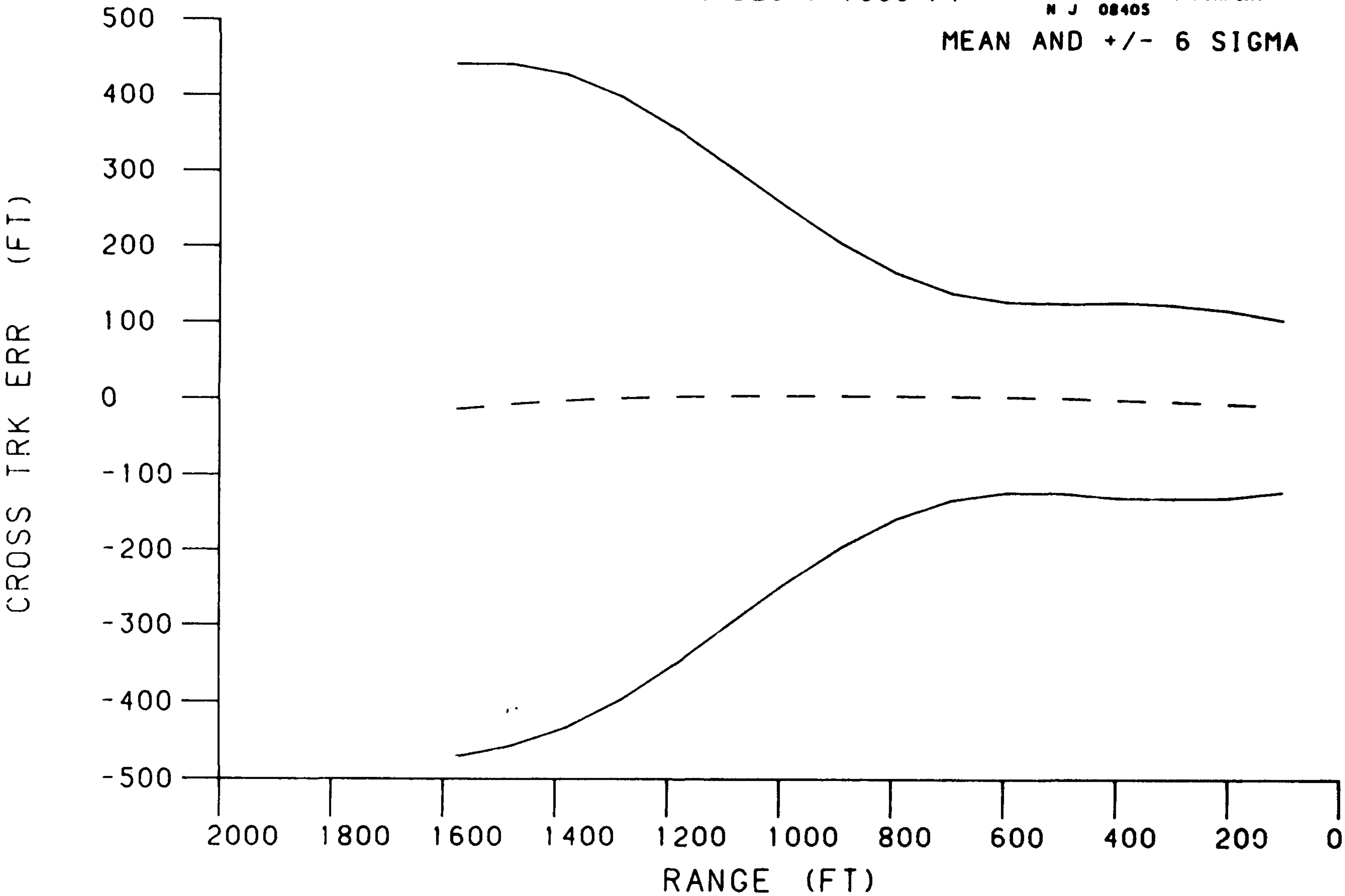

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 90 DEG , 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
CROSS TRK ERR (FT)
500
400
300
200
100
0
-100
-200
-300
-400
-500
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 90 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
CROSS TRK ERR (FT)
500
400
300
200
100
0
-100
-200
-300
-400
-500
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)

HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 180 DEG , 1600 FT

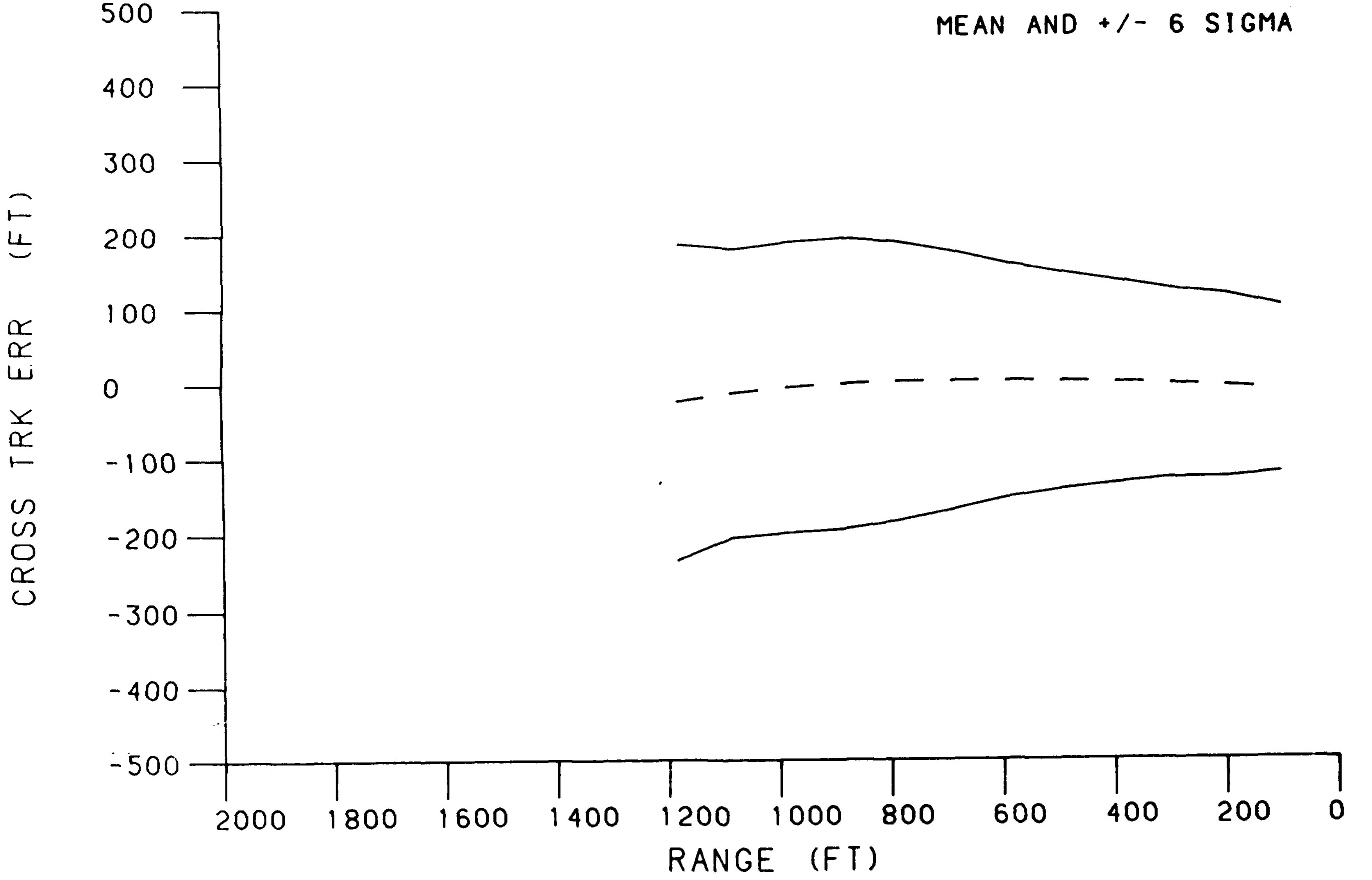
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405

MEAN AND +/- 6 SIGMA



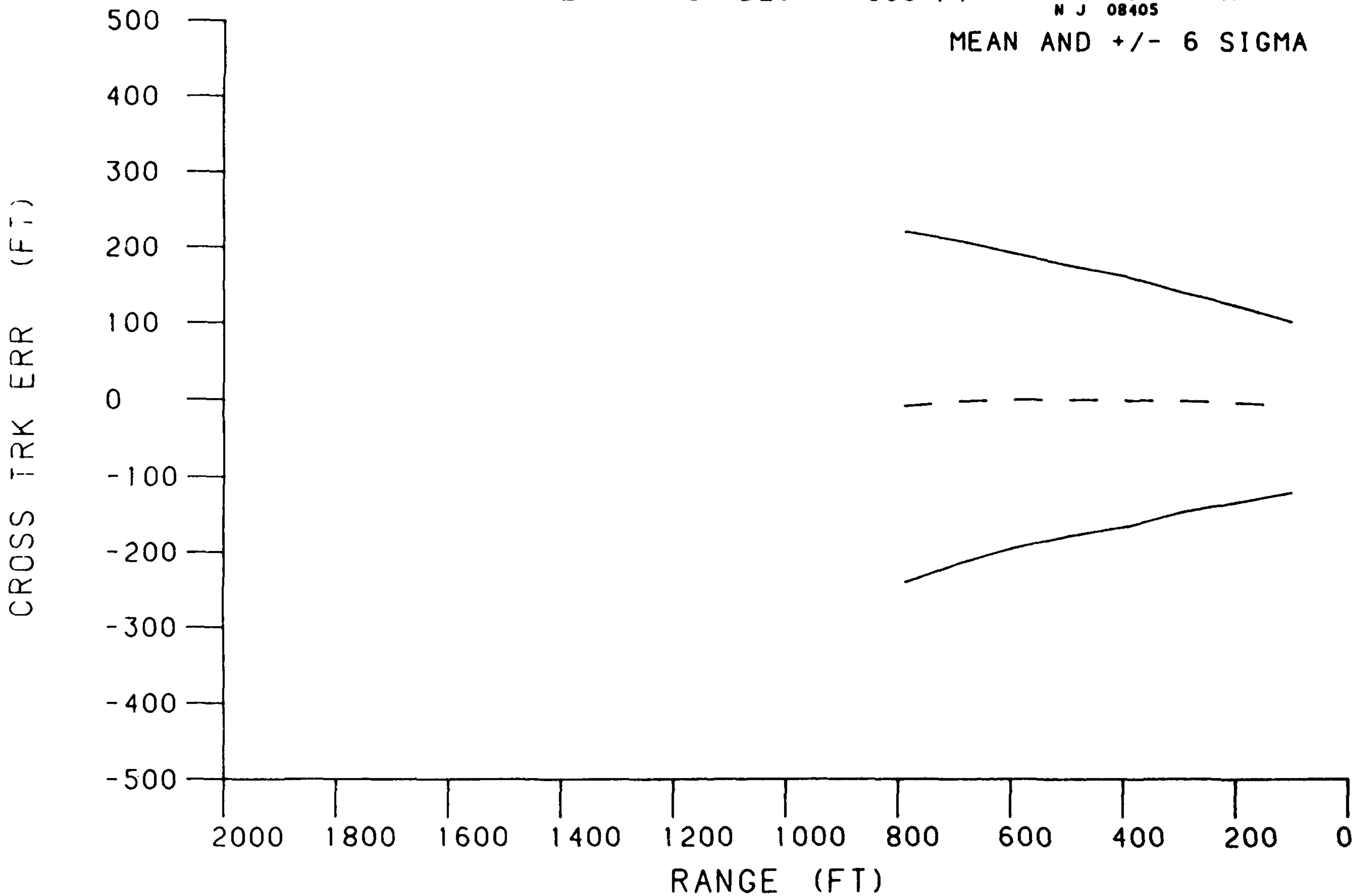
HELIPORT CURVED-APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 180 DEG . 1200 FT

DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405



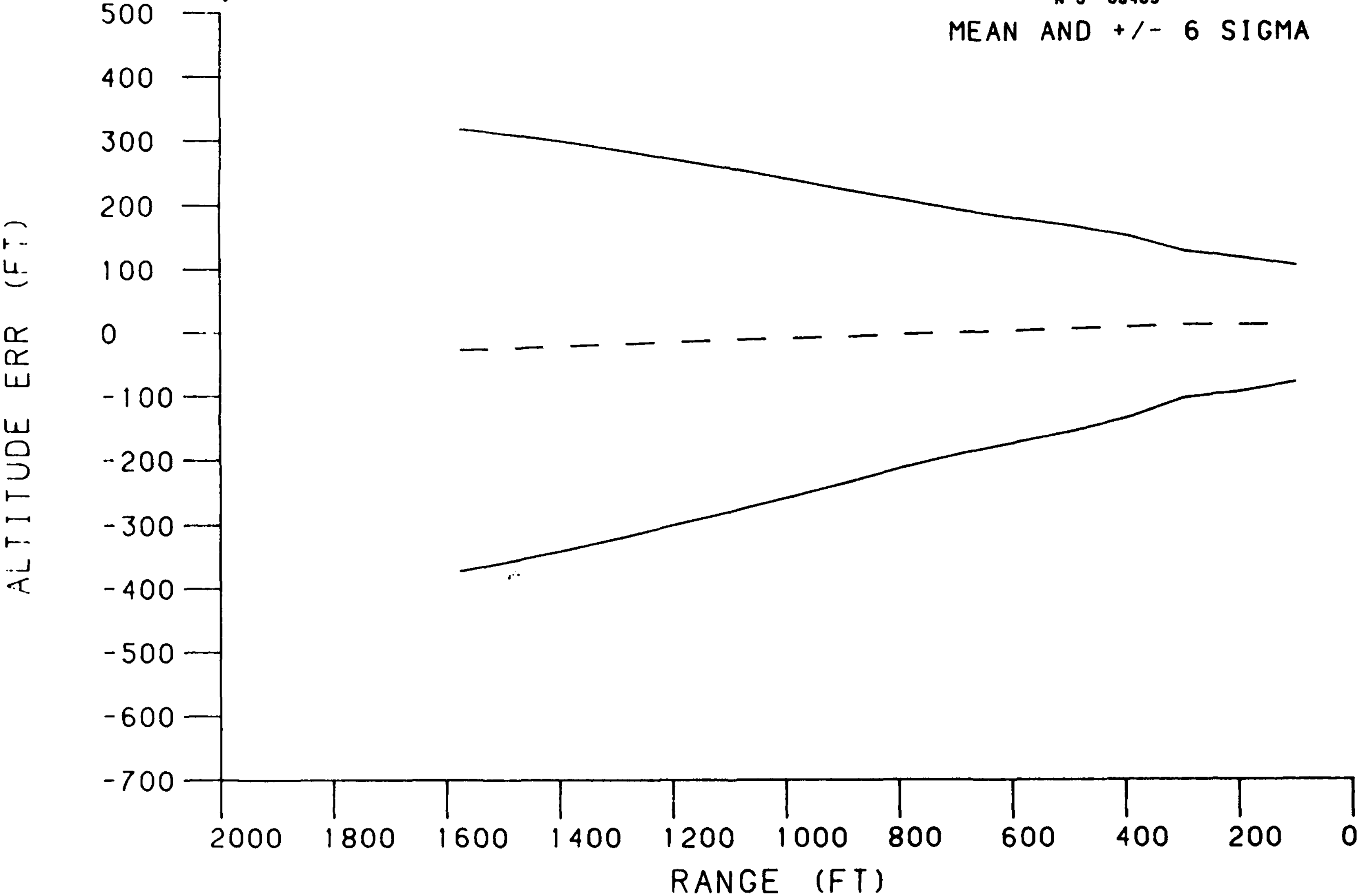
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 180 DEG , 800 FT

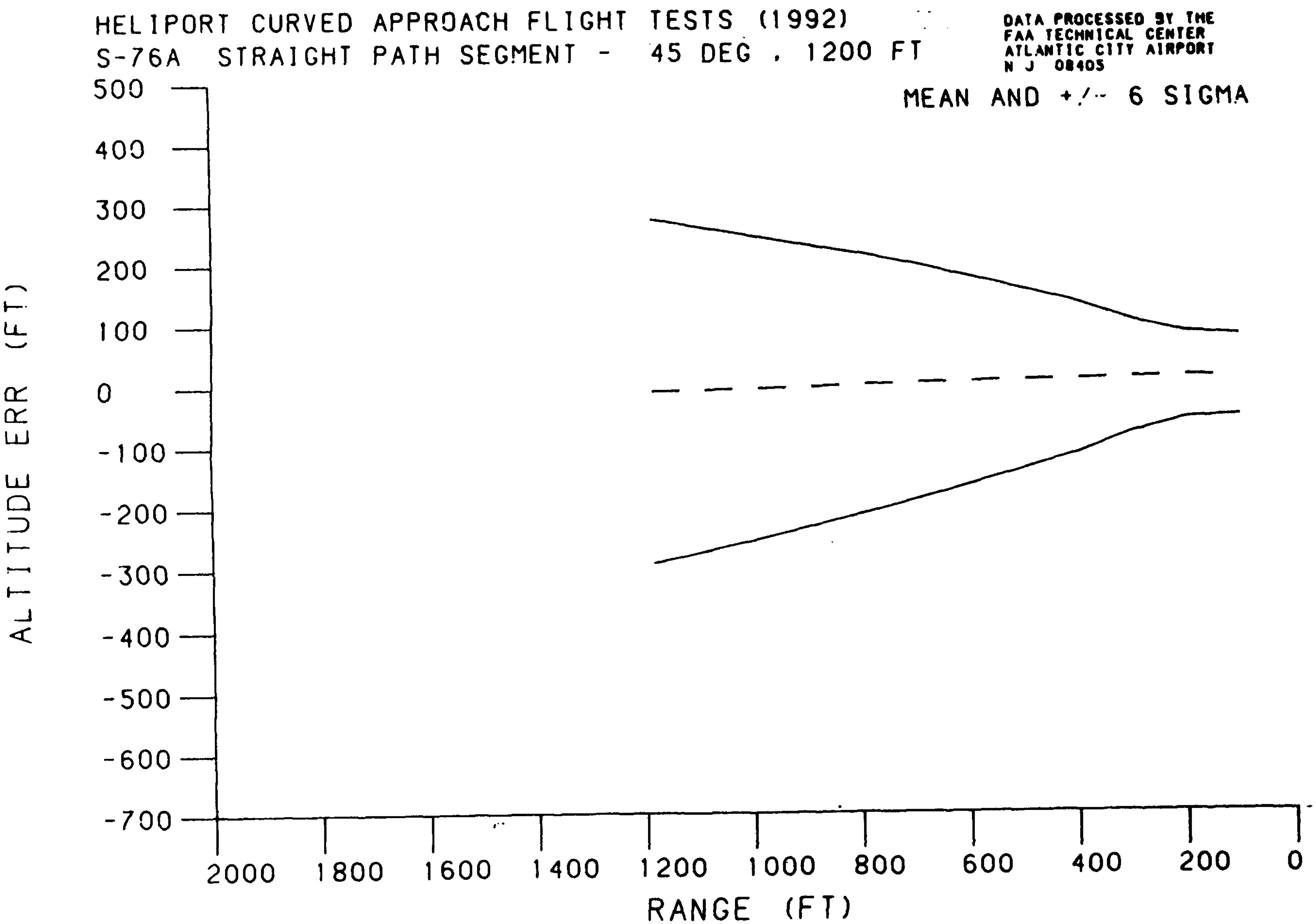
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405

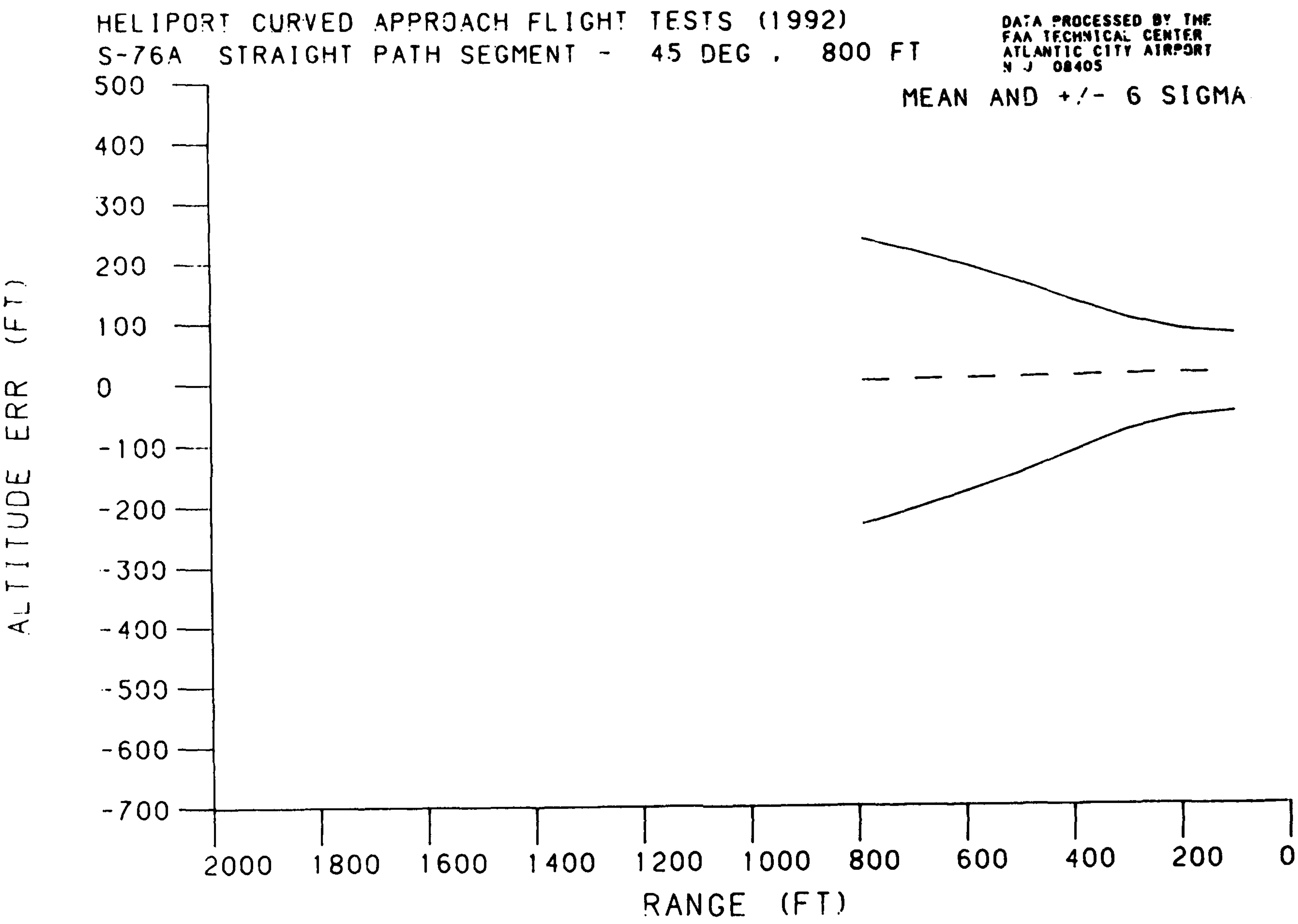


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 45 DEG , 1600 FT

DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405

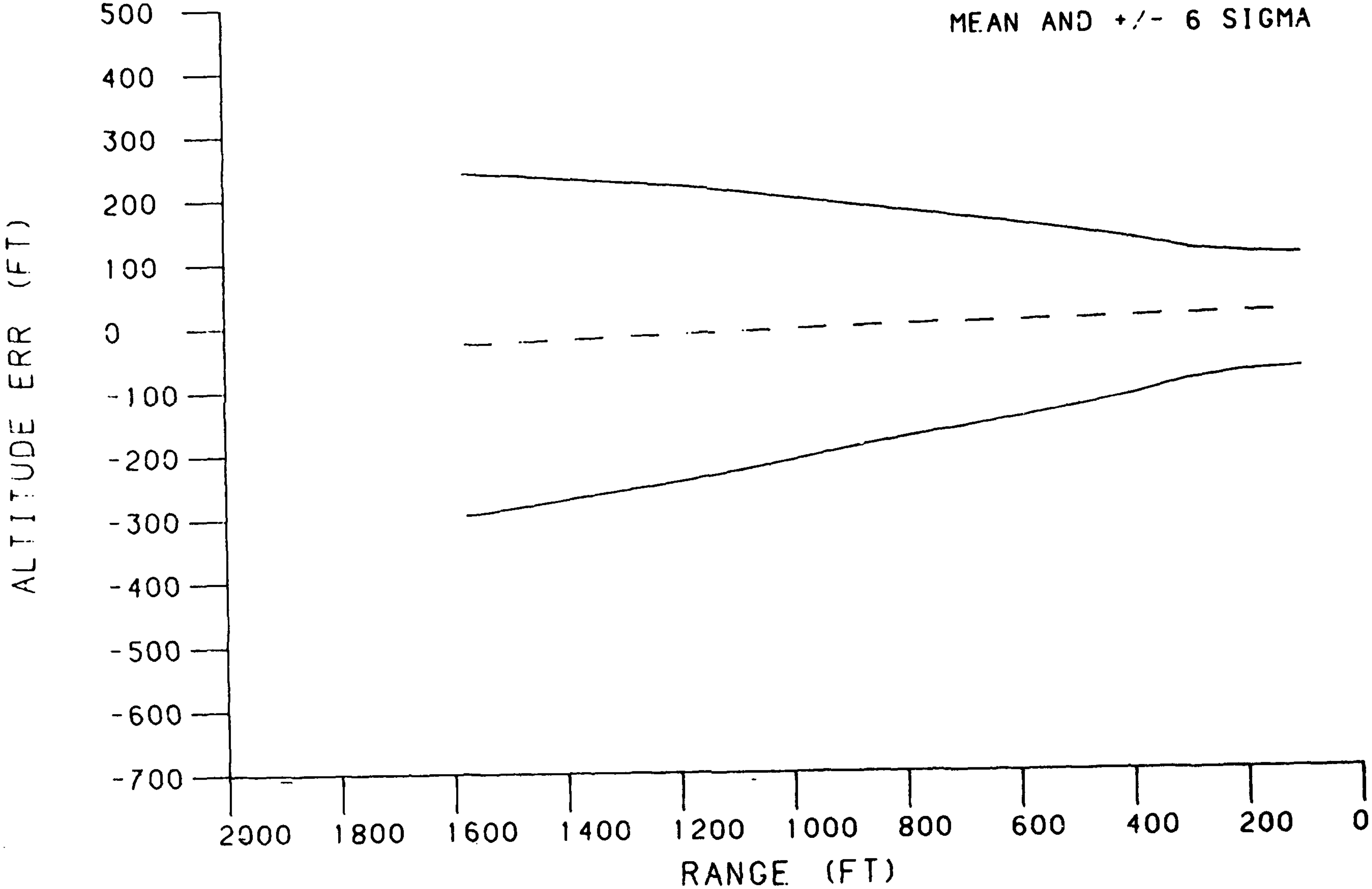



HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 45 DEG , 1200 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
ALTITUDE ERR (FT)
500
400
300
200
100
0
-100
-200
-300
-400
-500
-600
-700
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 45 DEG , 800 FT
DATA PROCESSED BY THE FAA TECHNICAL CENTER ATLANTIC CITY AIRPORT N J 08405
MEAN AND +/- 6 SIGMA
ALTITUDE ERR (FT)
500
400
300
200
100
0
-100
-200
-300
-400
-500
-600
-700
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)

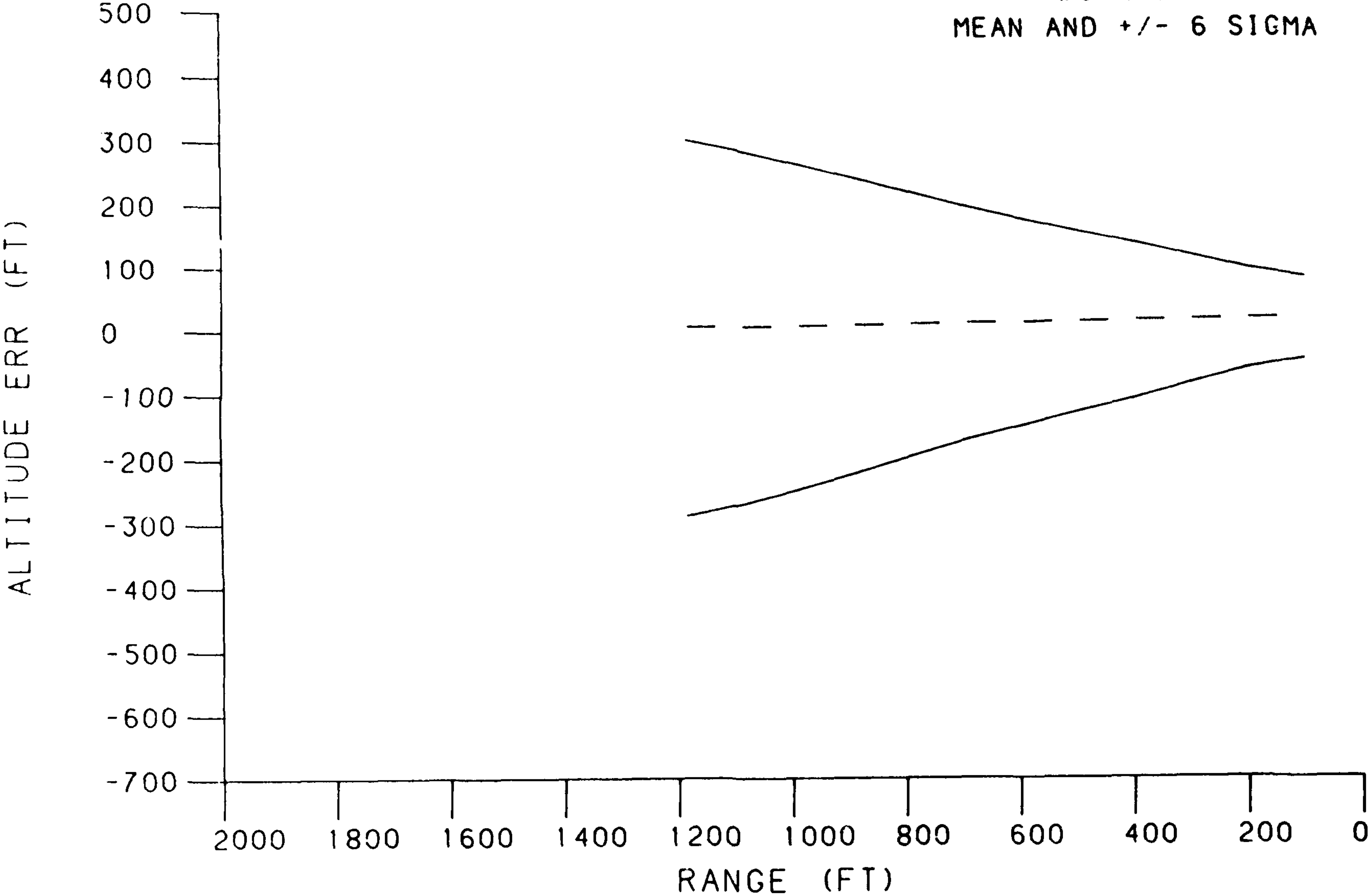
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 90 DEG , 1600 FT

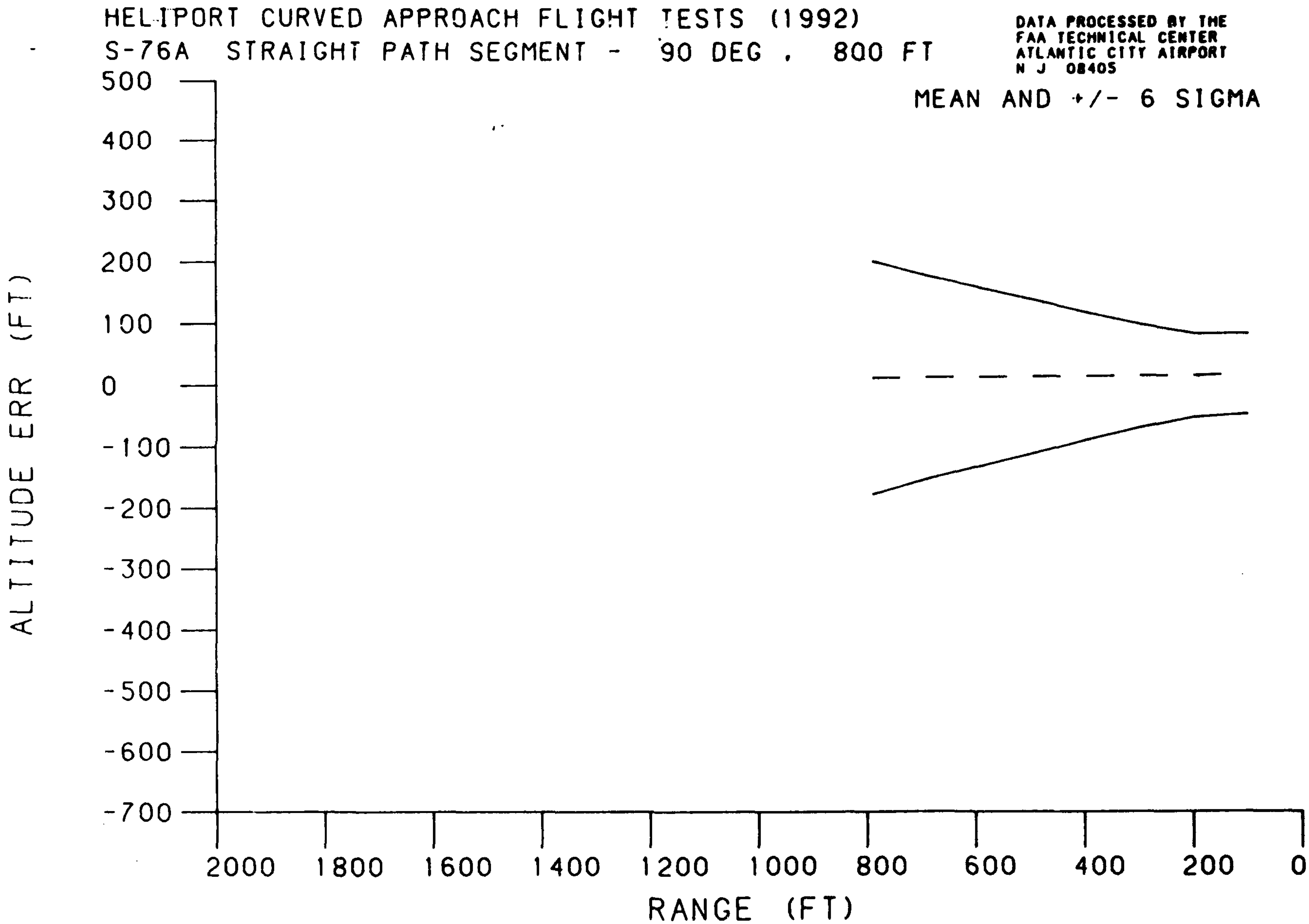
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405



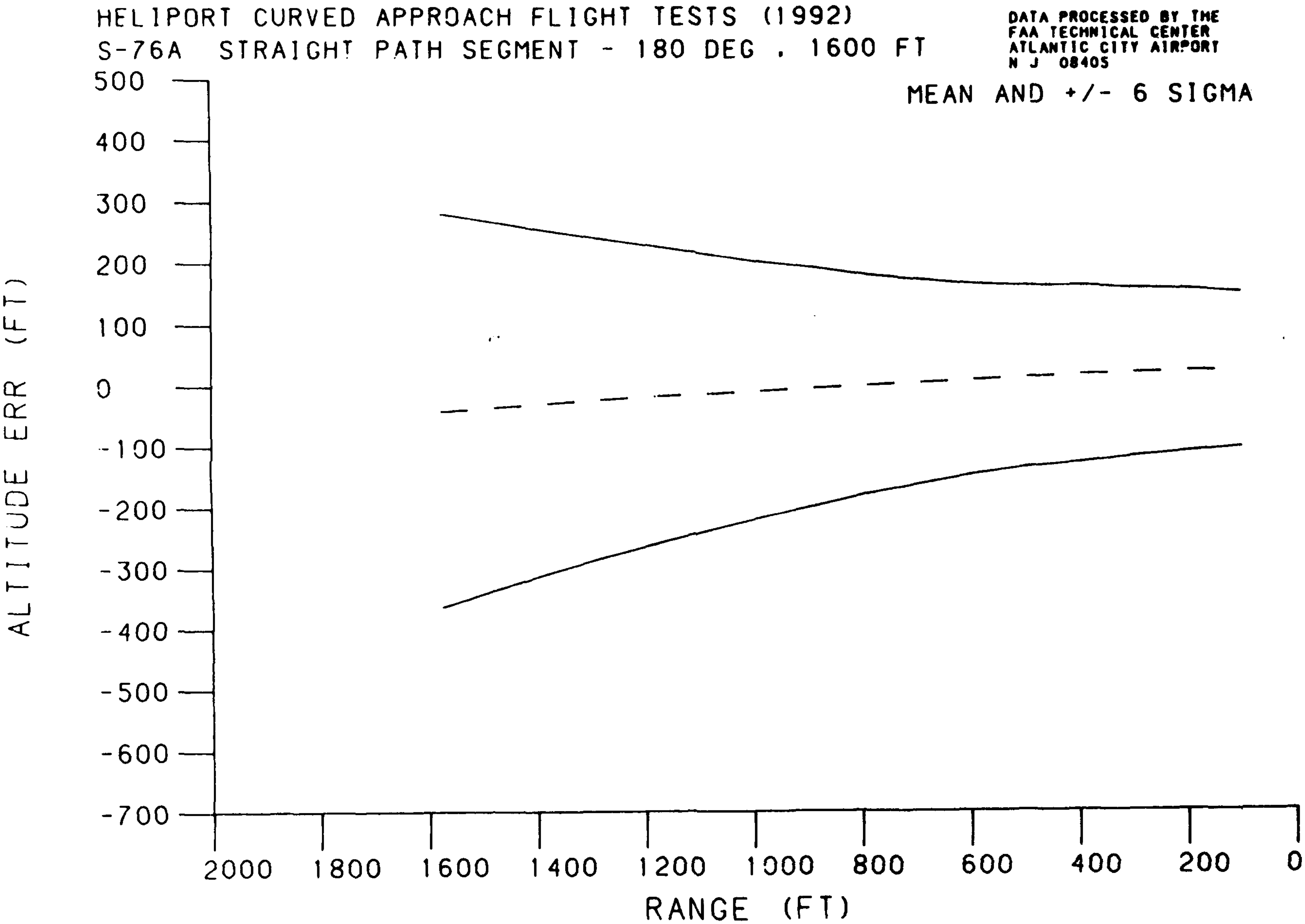
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 90 DEG , 1200 FT

DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405





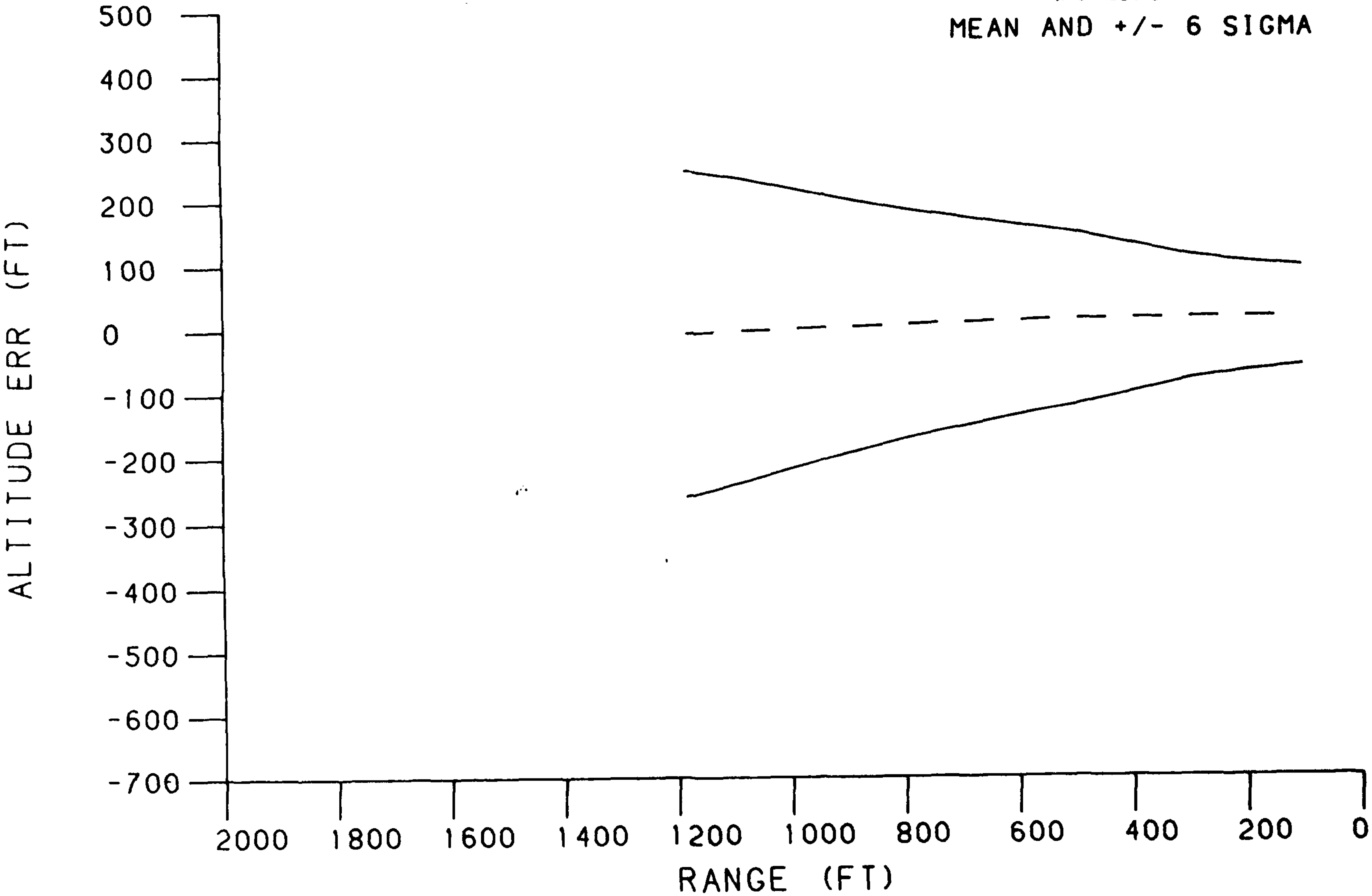
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 90 DEG , 800 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
500
400
300
200
100
0
-100
-200
-300
-400
-500
-600
-700
ALTITUDE ERR (FT)
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)


HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 180 DEG . 1600 FT
DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405
MEAN AND +/- 6 SIGMA
ALTITUDE ERR (FT)
500
400
300
200
100
0
-100
-200
-300
-400
-500
-600
-700
2000
1800
1600
1400
1200
1000
800
600
400
200
0
RANGE (FT)

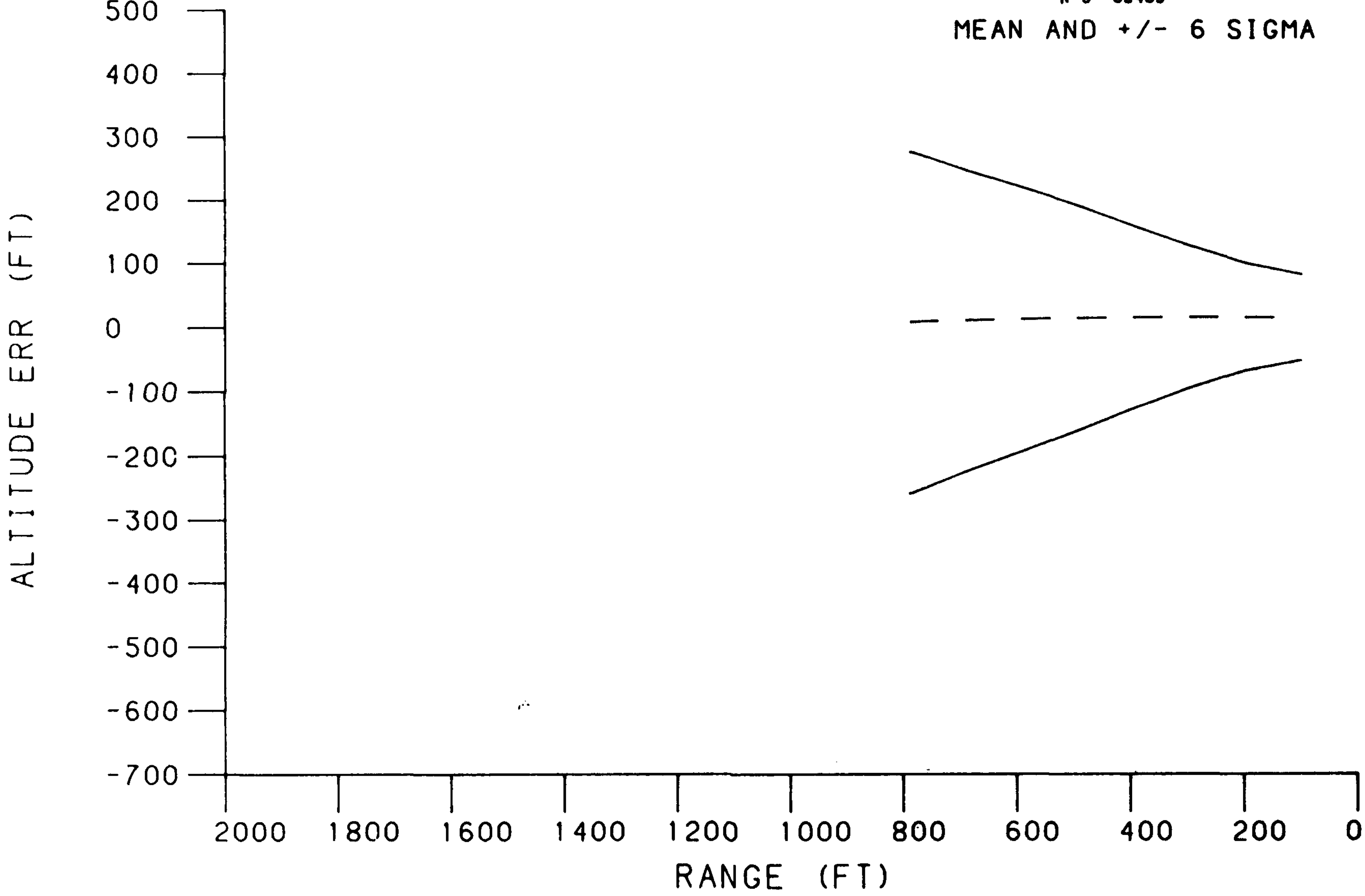
HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 180 DEG , 1200 FT

DATA PROCESSED BY THE
FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT
N J 08405

MEAN AND +/- 6 SIGMA



HELIPORT CURVED APPROACH FLIGHT TESTS (1992)
S-76A STRAIGHT PATH SEGMENT - 180 DEG . 800 FT



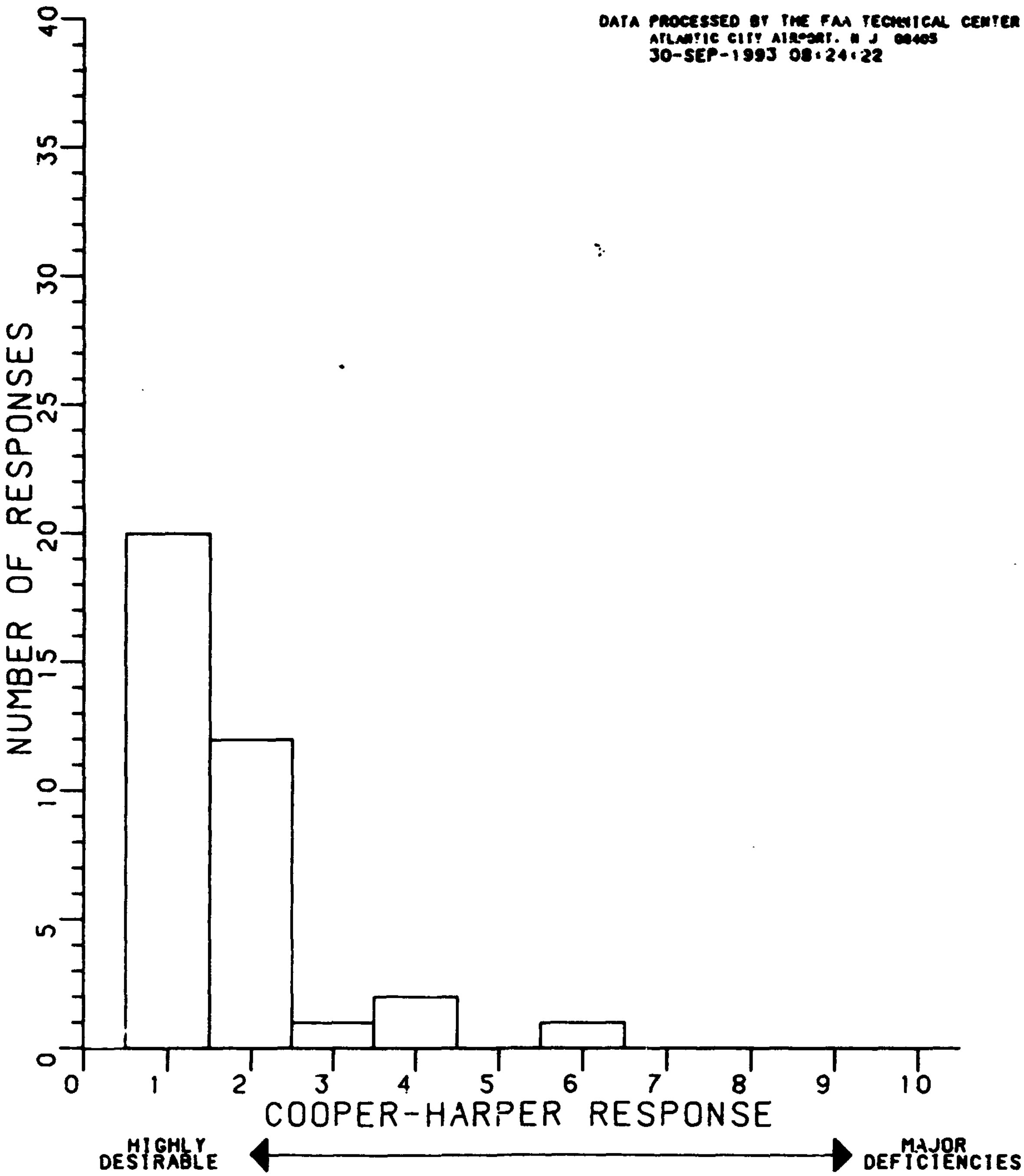
APPENDIX F
PLOTS OF IN-FLIGHT COOPER-HARPER RATINGS

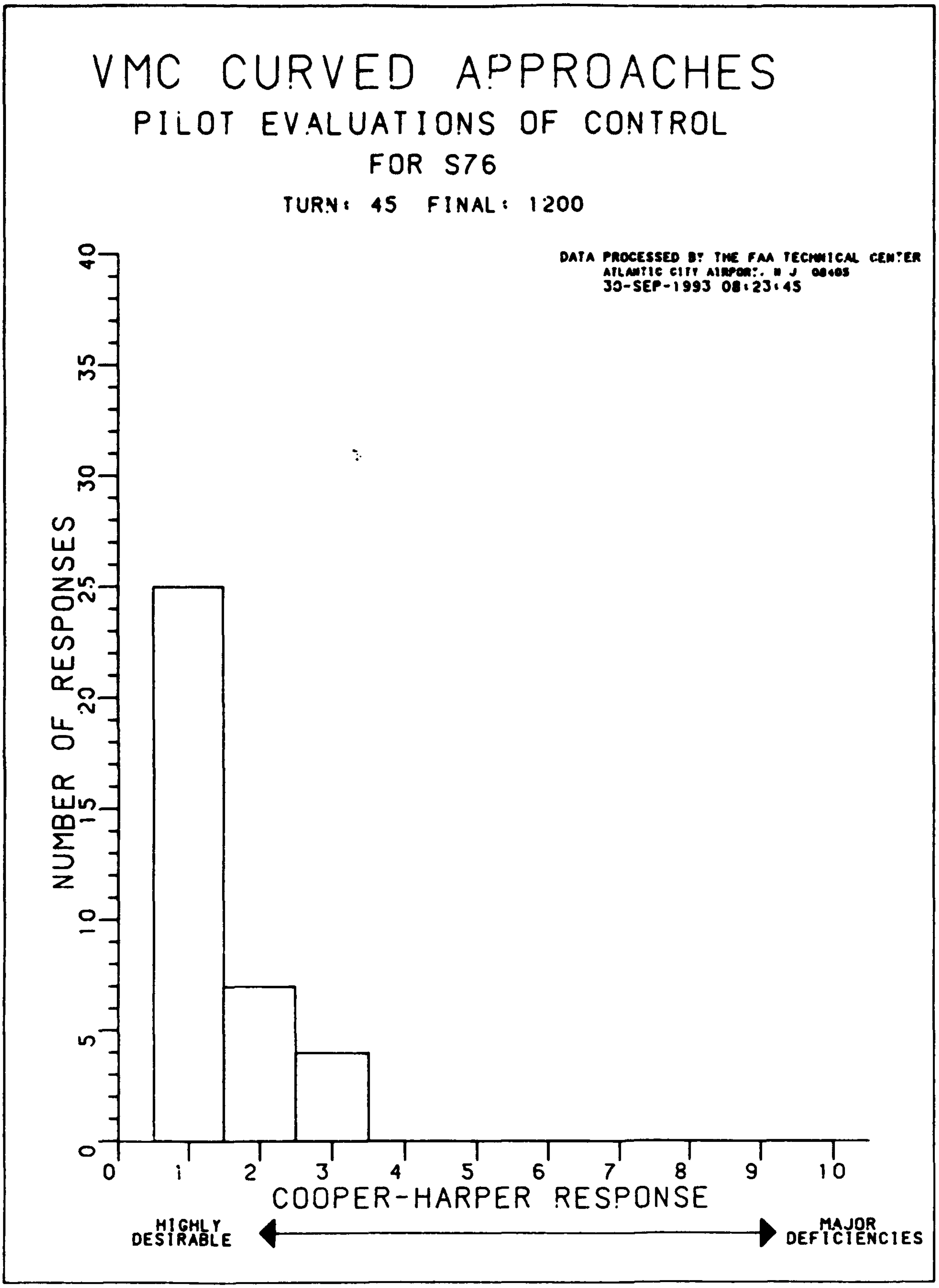
VMC CURVED APPROACHES

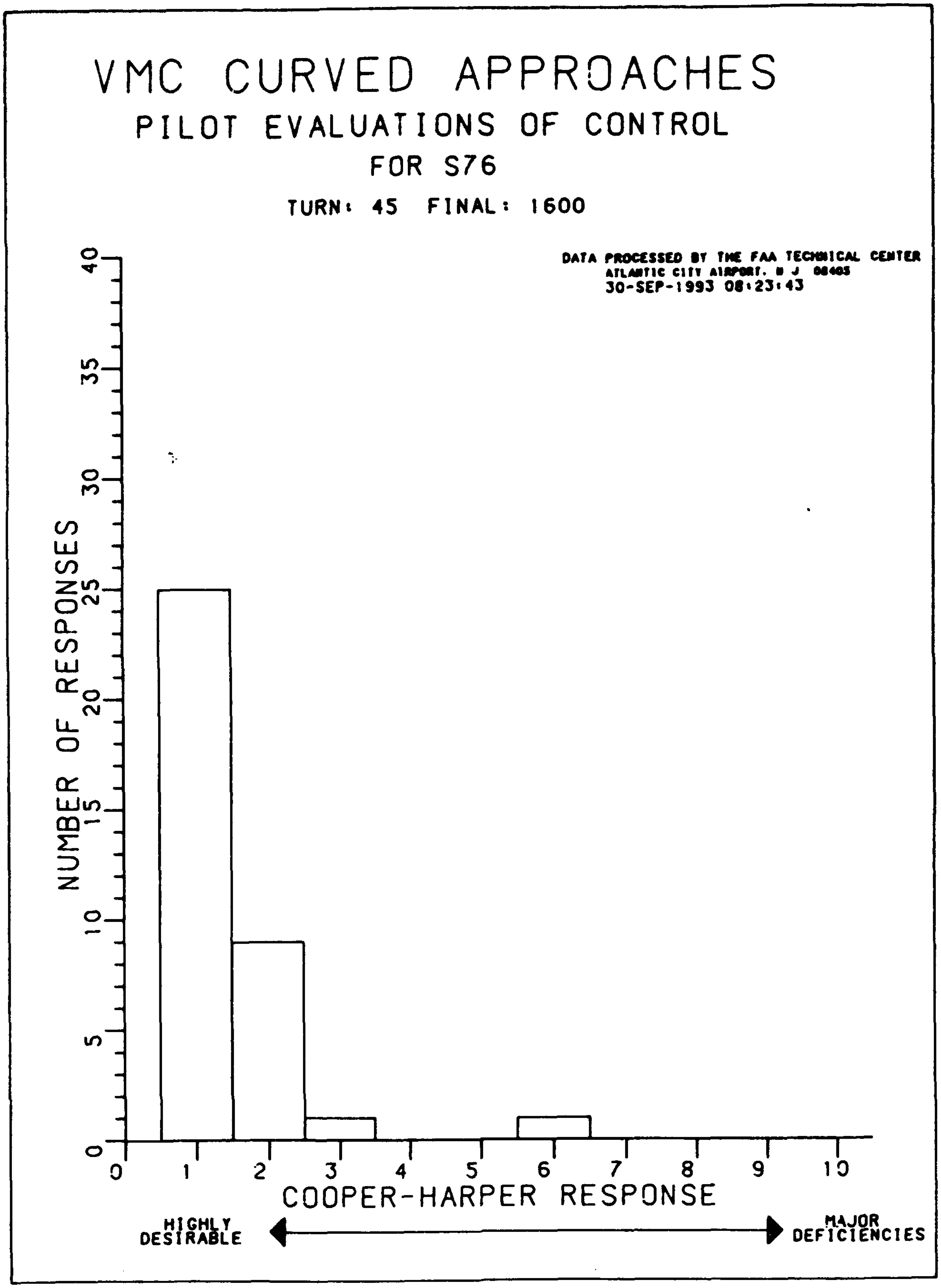
PILOT EVALUATIONS OF CONTROL

FOR S76

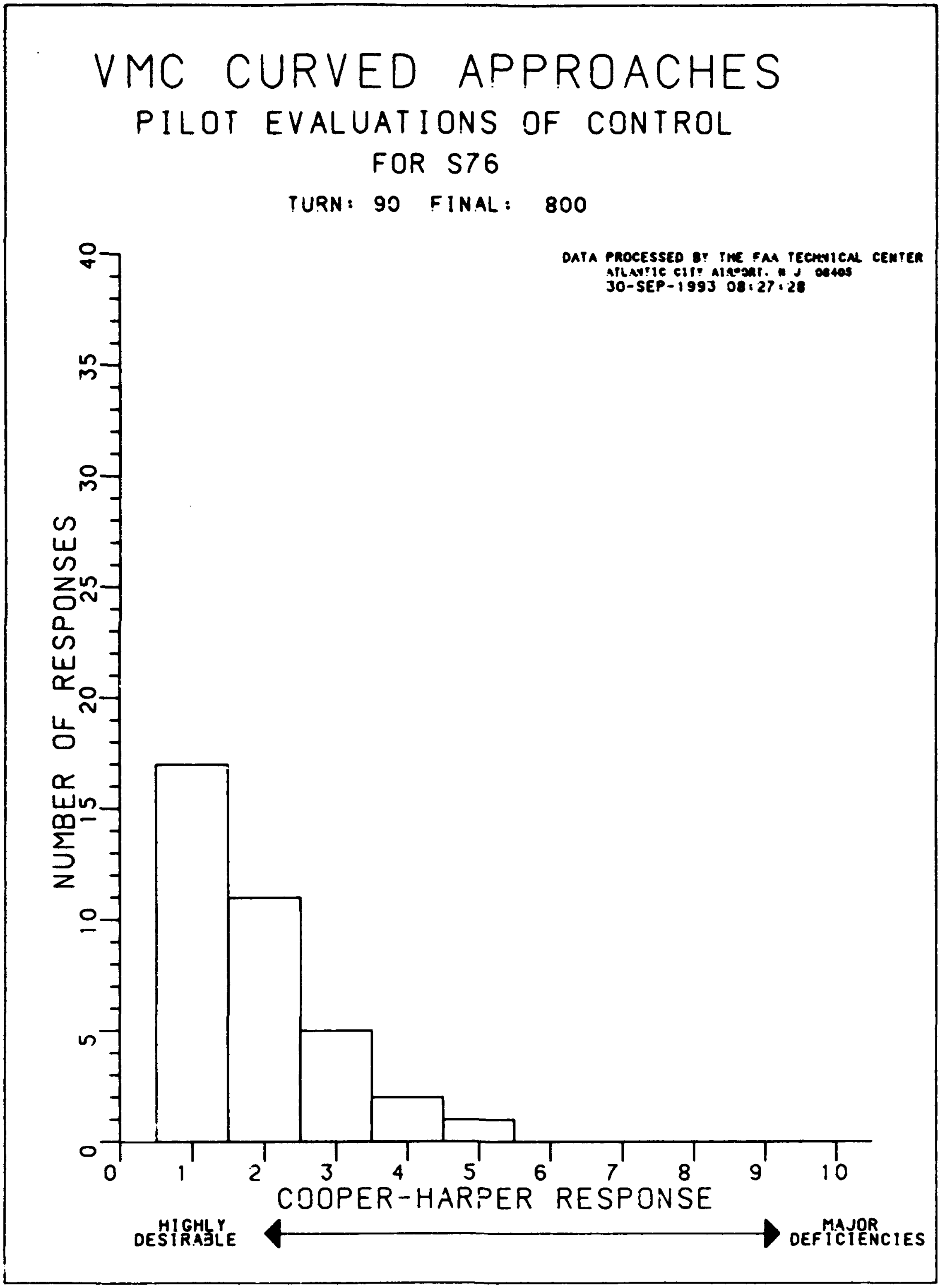
TURN: 45 FINAL: 800

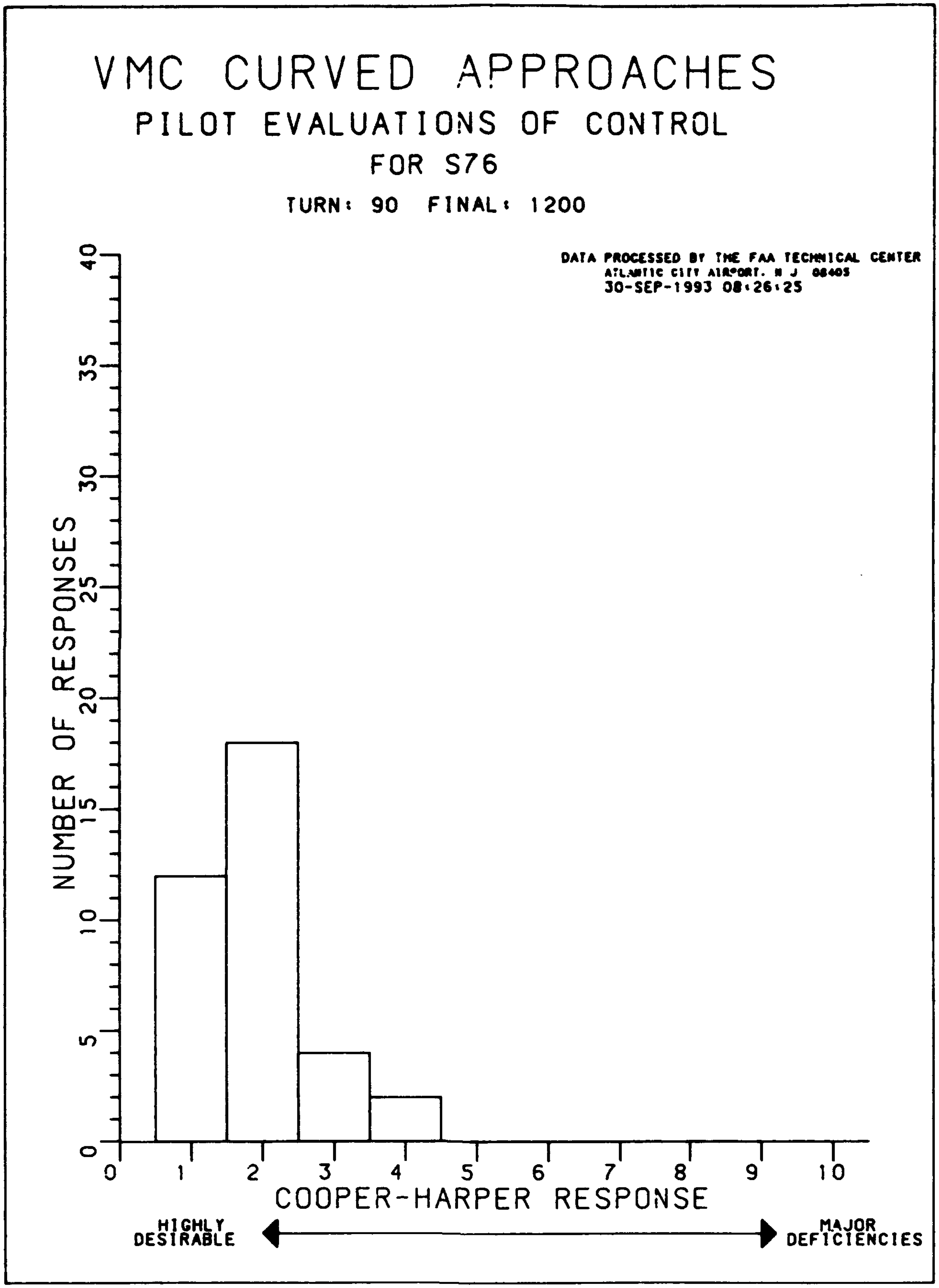



VMC CURVED APPROACHES
PILOT EVALUATIONS OF CONTROL
FOR S76
TURN: 45 FINAL: 1200
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 08:23:45
NUMBER OF RESPONSES
0
5
10
15
20
25
30
35
40
0
1
2
3
4
5
6
7
8
9
10
COOPER-HARPER RESPONSE
HIGHLY DESIRABLE
MAJOR DEFICIENCIES

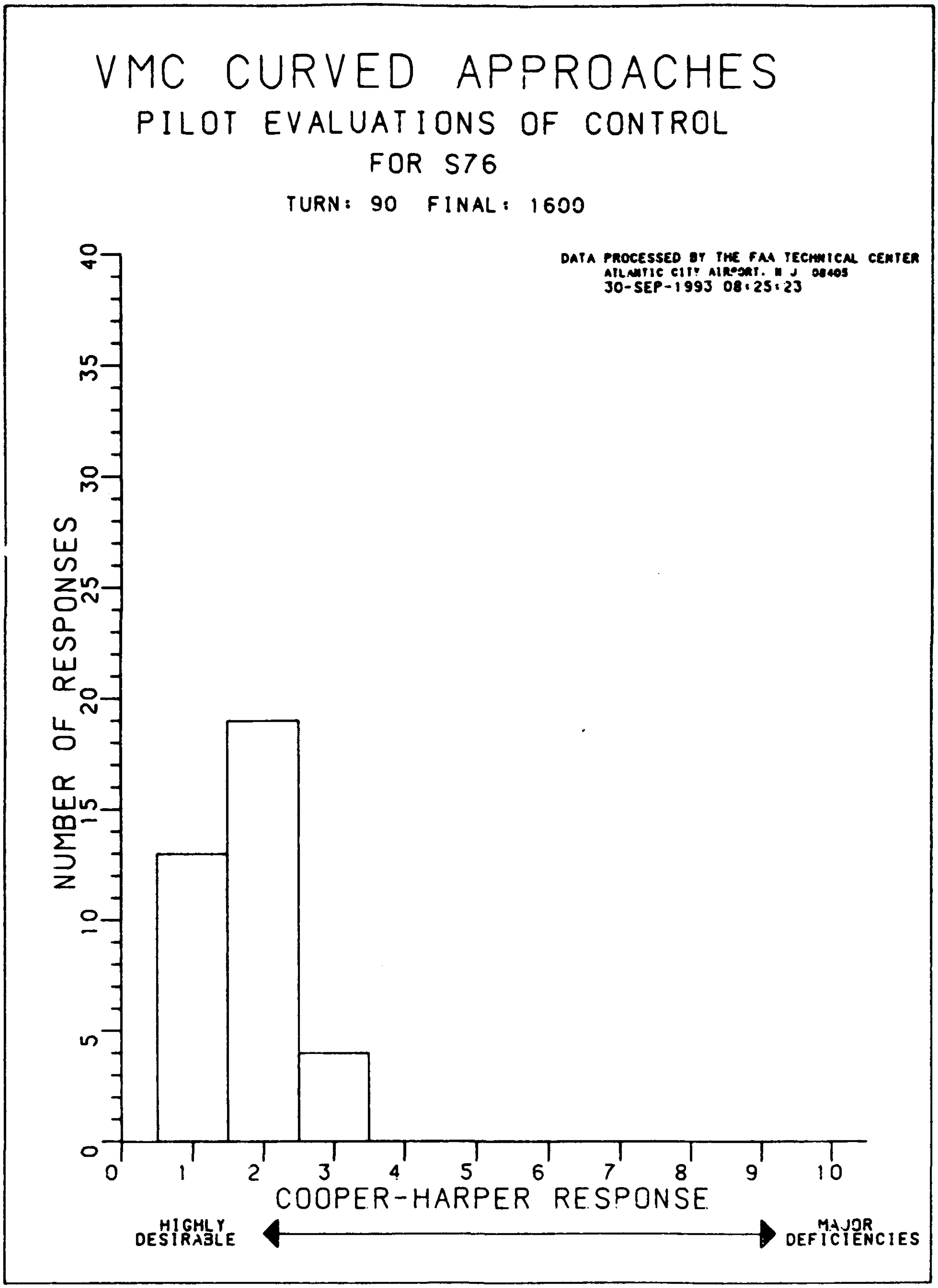


VMC CURVED APPROACHES
PILOT EVALUATIONS OF CONTROL
FOR S76
TURN: 45 FINAL: 1600
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 08:23:43
NUMBER OF RESPONSES
0
5
10
15
20
25
30
35
40
0 1 2 3 4 5 6 7 8 9 10
COOPER-HARPER RESPONSE
HIGHLY DESIRABLE
MAJOR DEFICIENCIES

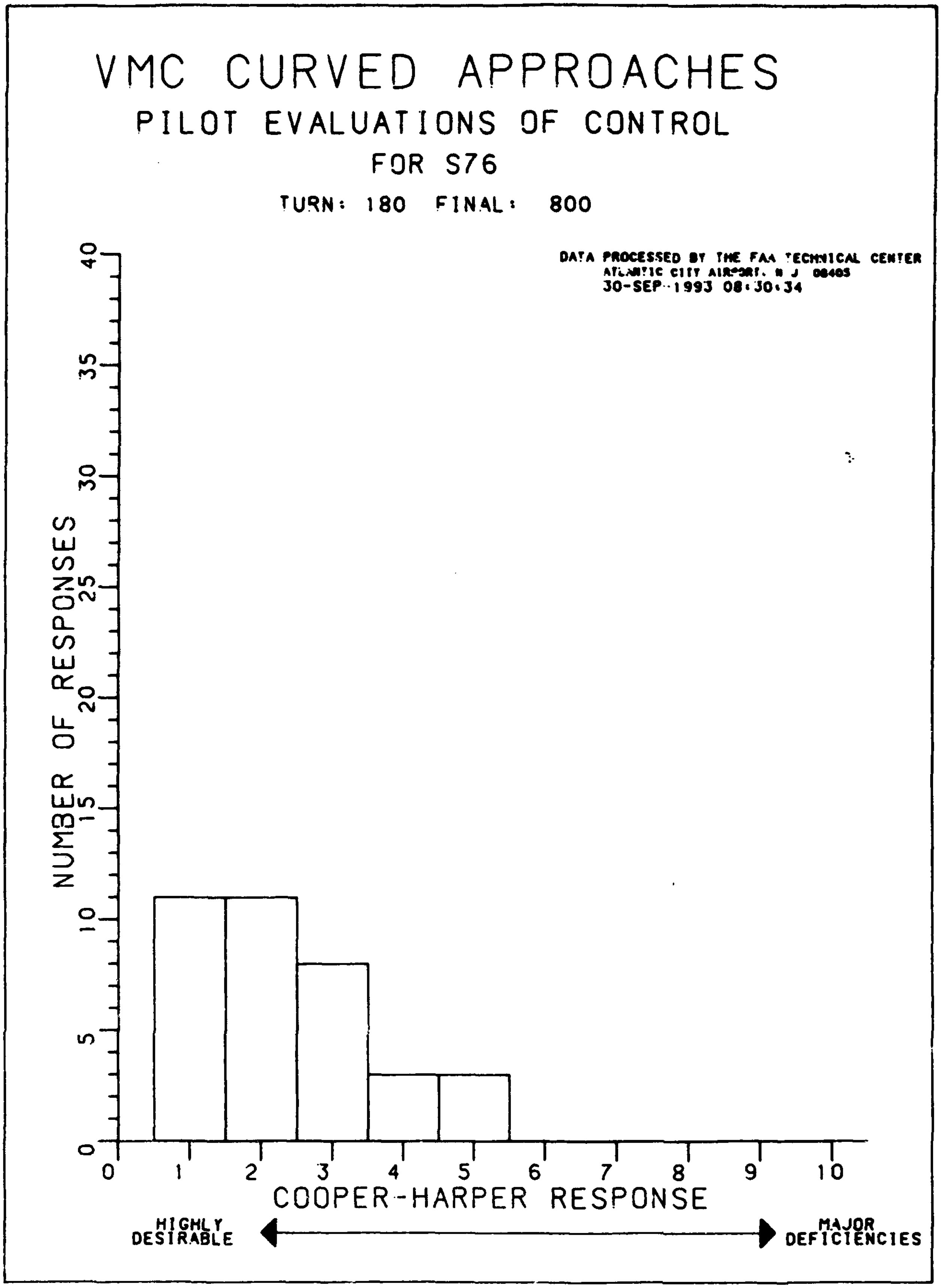

VMC CURVED APPROACHES
PILOT EVALUATIONS OF CONTROL
FOR S76
TURN: 90 FINAL: 800
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 08:27:28
NUMBER OF RESPONSES
0
5
10
15
20
25
30
35
40
0
1
2
3
4
5
6
7
8
9
10
COOPER-HARPER RESPONSE
HIGHLY DESIRABLE
MAJOR DEFICIENCIES

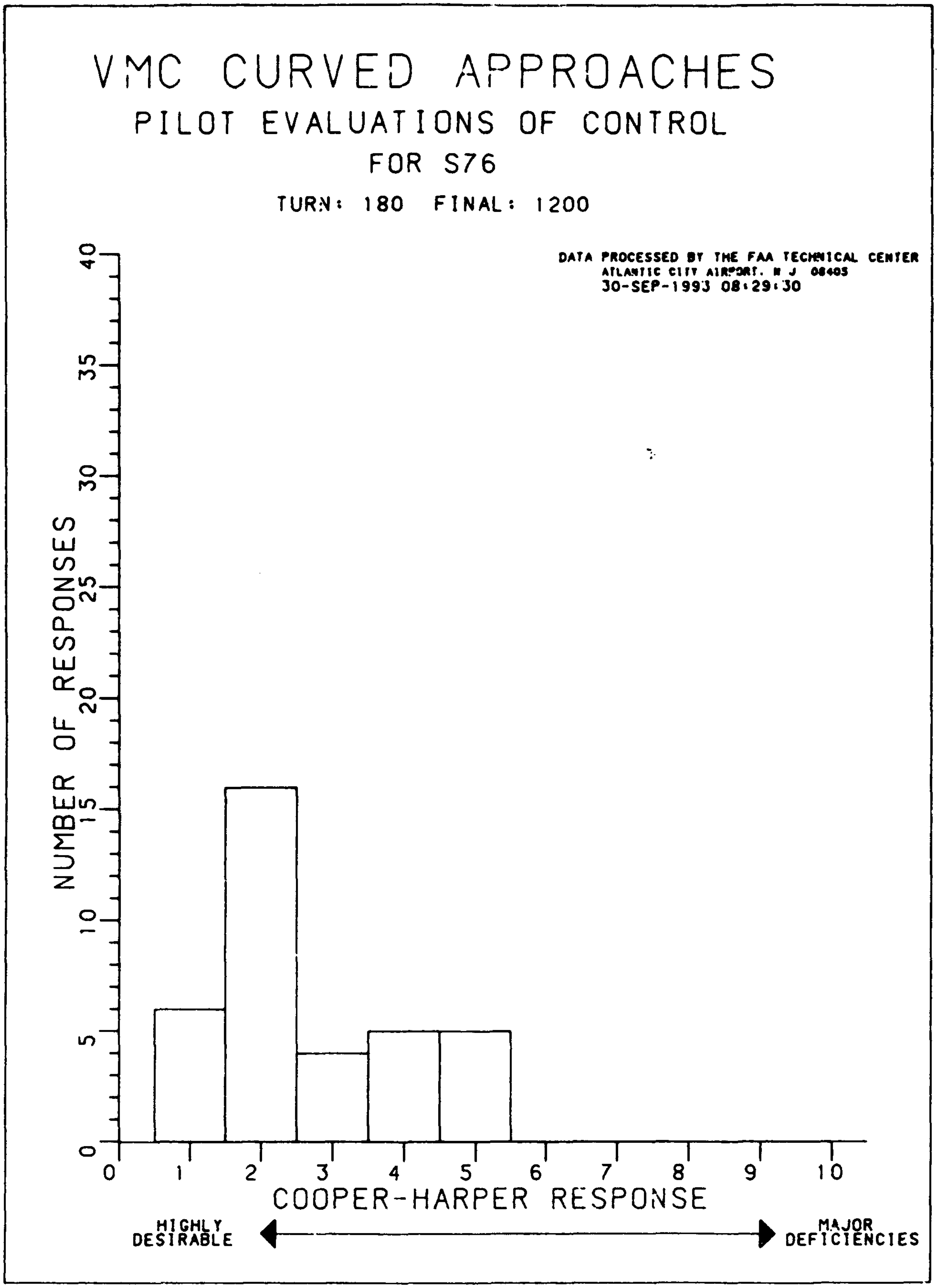


VMC CURVED APPROACHES
PILOT EVALUATIONS OF CONTROL
FOR S76
TURN: 90 FINAL: 1200
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 08:26:25
NUMBER OF RESPONSES
0
5
10
15
20
25
30
35
40
0
1
2
3
4
5
6
7
8
9
10
COOPER-HARPER RESPONSE
HIGHLY DESIRABLE
MAJOR DEFICIENCIES

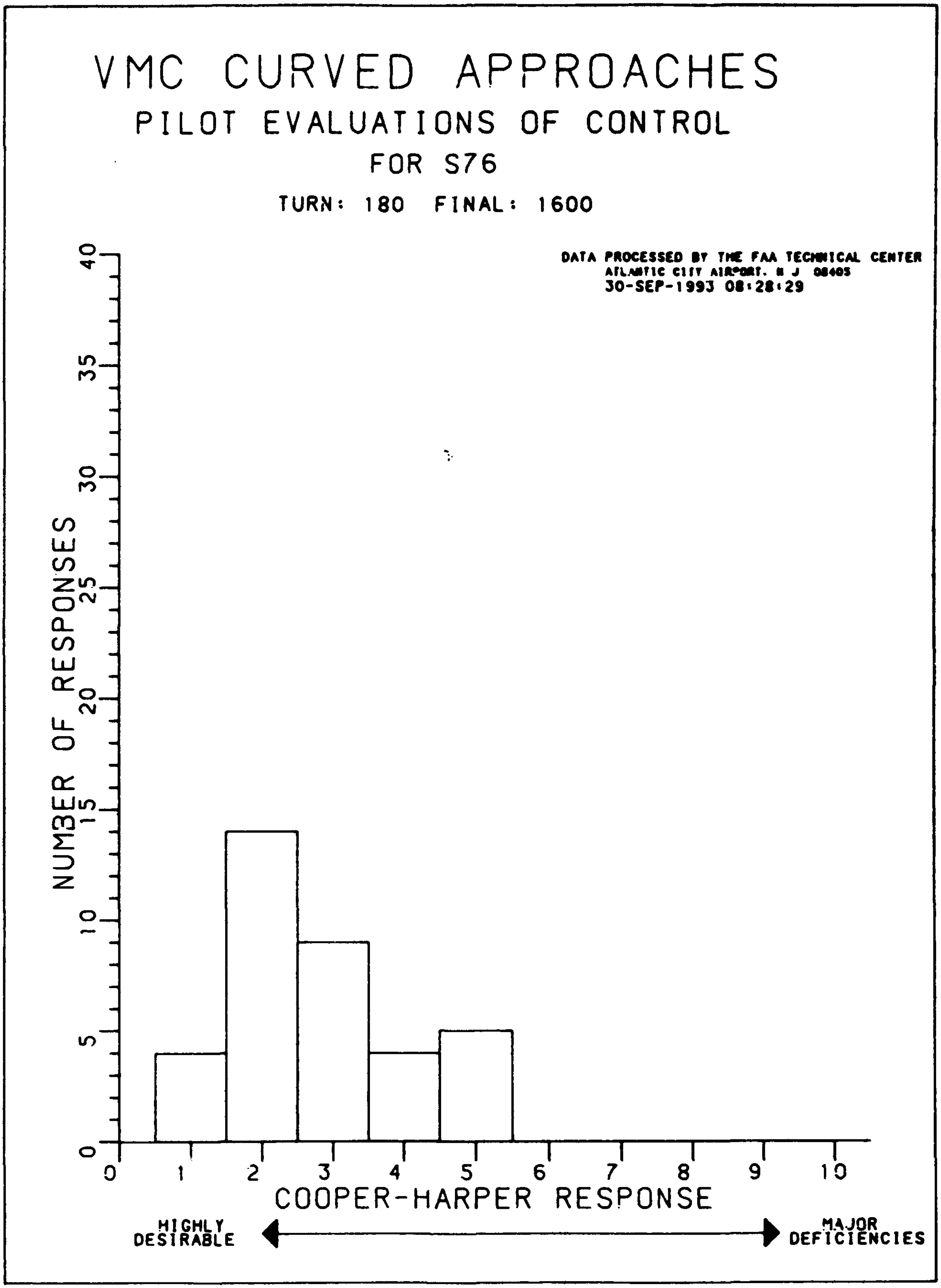


VMC CURVED APPROACHES
PILOT EVALUATIONS OF CONTROL
FOR S76
TURN: 90 FINAL: 1600
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 08:25:23
NUMBER OF RESPONSES
0
5
10
15
20
25
30
35
40
0
1
2
3
4
5
6
7
8
9
10
COOPER-HARPER RESPONSE
HIGHLY DESIRABLE
MAJOR DEFICIENCIES

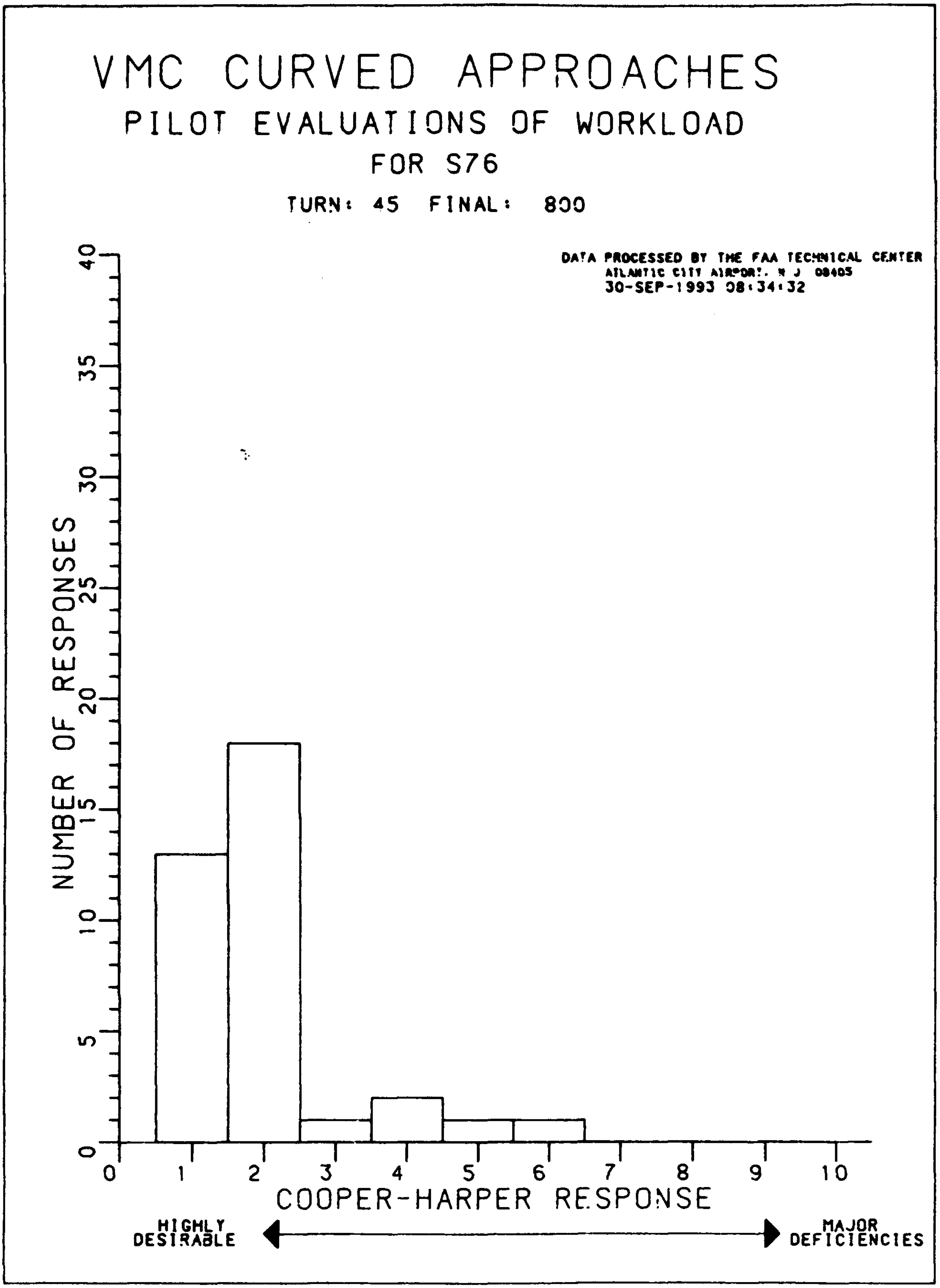

VMC CURVED APPROACHES
PILOT EVALUATIONS OF CONTROL
FOR S76
TURN: 180 FINAL: 800
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 08:30:34
NUMBER OF RESPONSES
0
5
10
15
20
25
30
35
40
0
1
2
3
4
5
6
7
8
9
10
COOPER-HARPER RESPONSE
HIGHLY DESIRABLE
MAJOR DEFICIENCIES



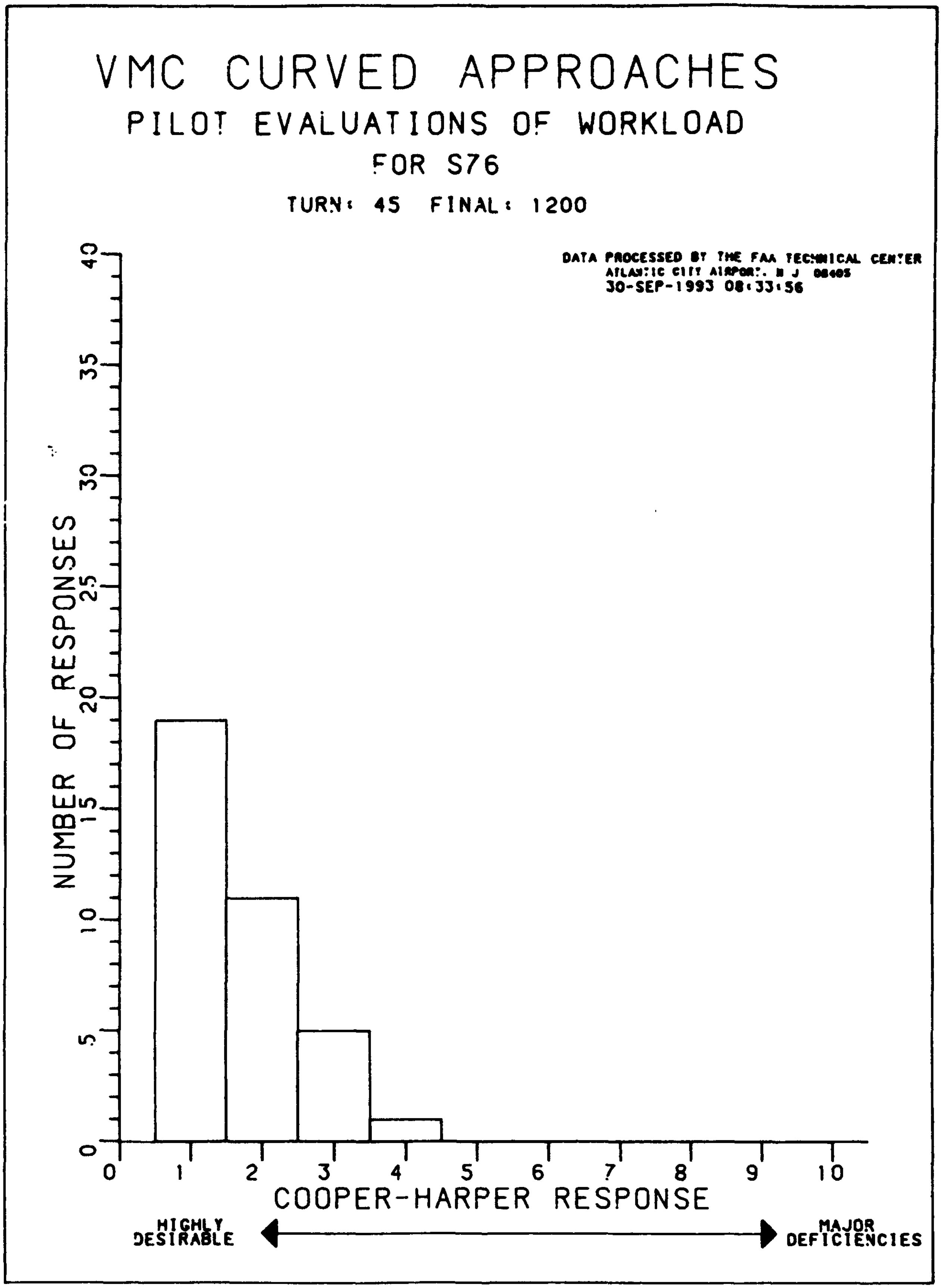
VMC CURVED APPROACHES
PILOT EVALUATIONS OF CONTROL
FOR S76
TURN: 180 FINAL: 1200
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 08:29:30
NUMBER OF RESPONSES
0
5
10
15
20
25
30
35
40
0
1
2
3
4
5
6
7
8
9
10
COOPER-HARPER RESPONSE
HIGHLY DESIRABLE
MAJOR DEFICIENCIES



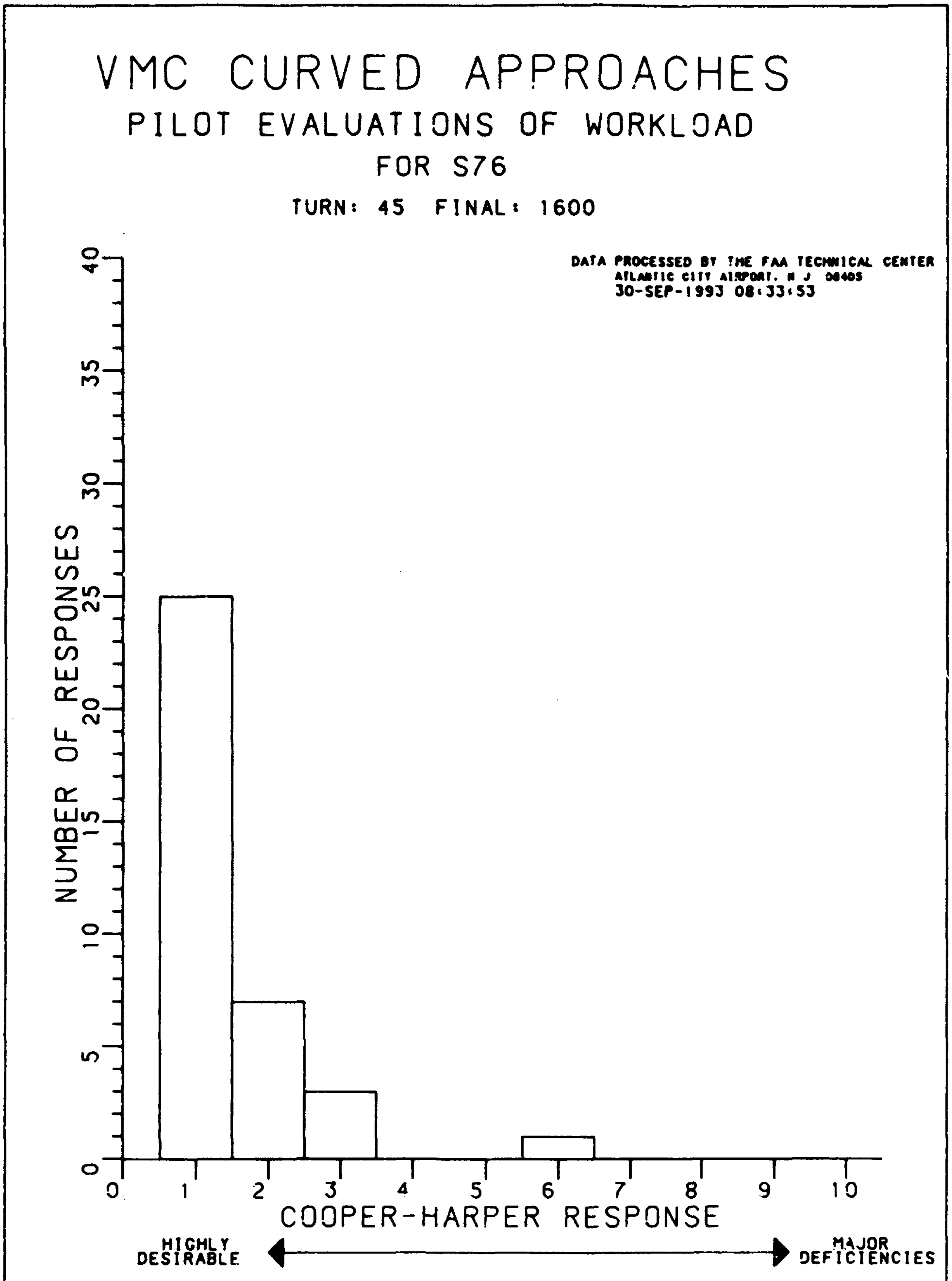
VMC CURVED APPROACHES
PILOT EVALUATIONS OF CONTROL
FOR S76
TURN: 180 FINAL: 1600
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 08:28:29
NUMBER OF RESPONSES
0
5
10
15
20
25
30
35
40
0 1 2 3 4 5 6 7 8 9 10
COOPER-HARPER RESPONSE
HIGHLY DESIRABLE
MAJOR DEFICIENCIES



VMC CURVED APPROACHES
PILOT EVALUATIONS OF WORKLOAD
FOR S76
TURN: 45 FINAL: 800
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 08:34:32
NUMBER OF RESPONSES
0
5
10
15
20
25
30
35
40
0 1 2 3 4 5 6 7 8 9 10
COOPER-HARPER RESPONSE
HIGHLY DESIRABLE
MAJOR DEFICIENCIES



VMC CURVED APPROACHES
PILOT EVALUATIONS OF WORKLOAD
FOR S76
TURN: 45 FINAL: 1200
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J
30-SEP-1993 08:33:56
NUMBER OF RESPONSES
0
5
10
15
20
25
30
35
40
0 1 2 3 4 5 6 7 8 9 10
COOPER-HARPER RESPONSE
HIGHLY DESIRABLE
MAJOR DEFICIENCIES

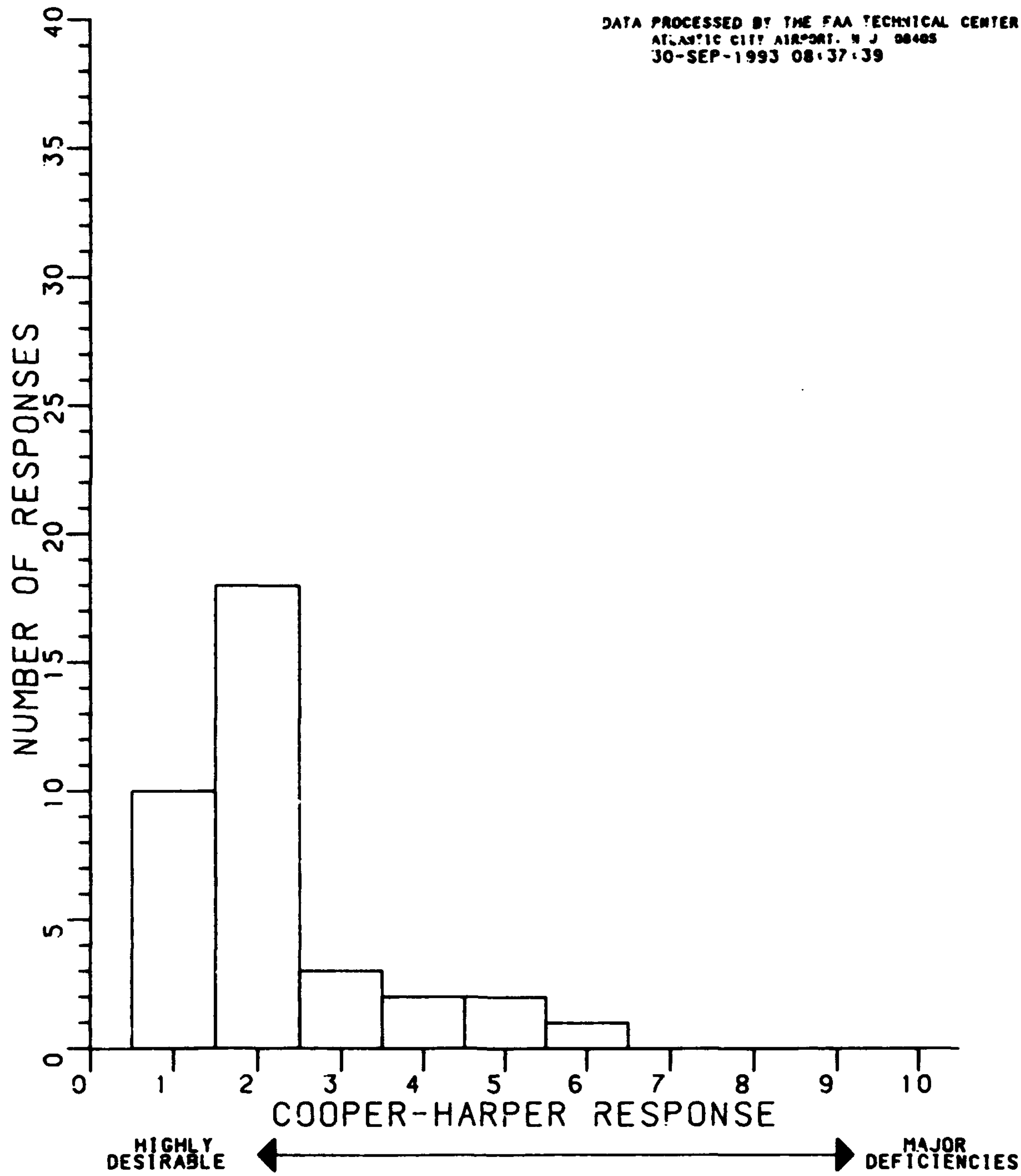

VMC CURVED APPROACHES
PILOT EVALUATIONS OF WORKLOAD
FOR S76
TURN: 45 FINAL: 1600
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 08:33:53
NUMBER OF RESPONSES
0
5
10
15
20
25
30
35
40
0
1
2
3
4
5
6
7
8
9
10
COOPER-HARPER RESPONSE
HIGHLY DESIRABLE
MAJOR DEFICIENCIES

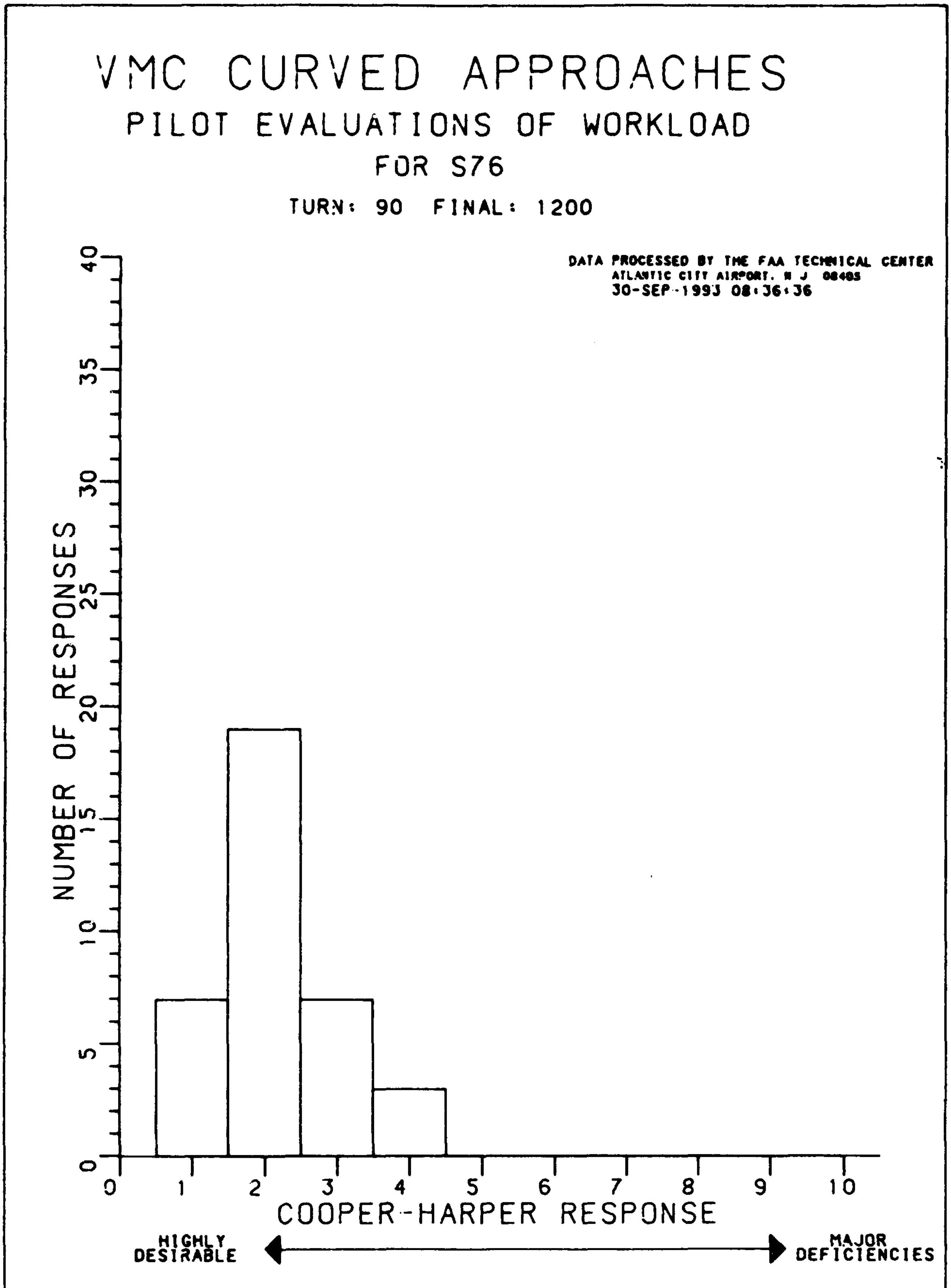
VMC CURVED APPROACHES

PILOT EVALUATIONS OF WORKLOAD

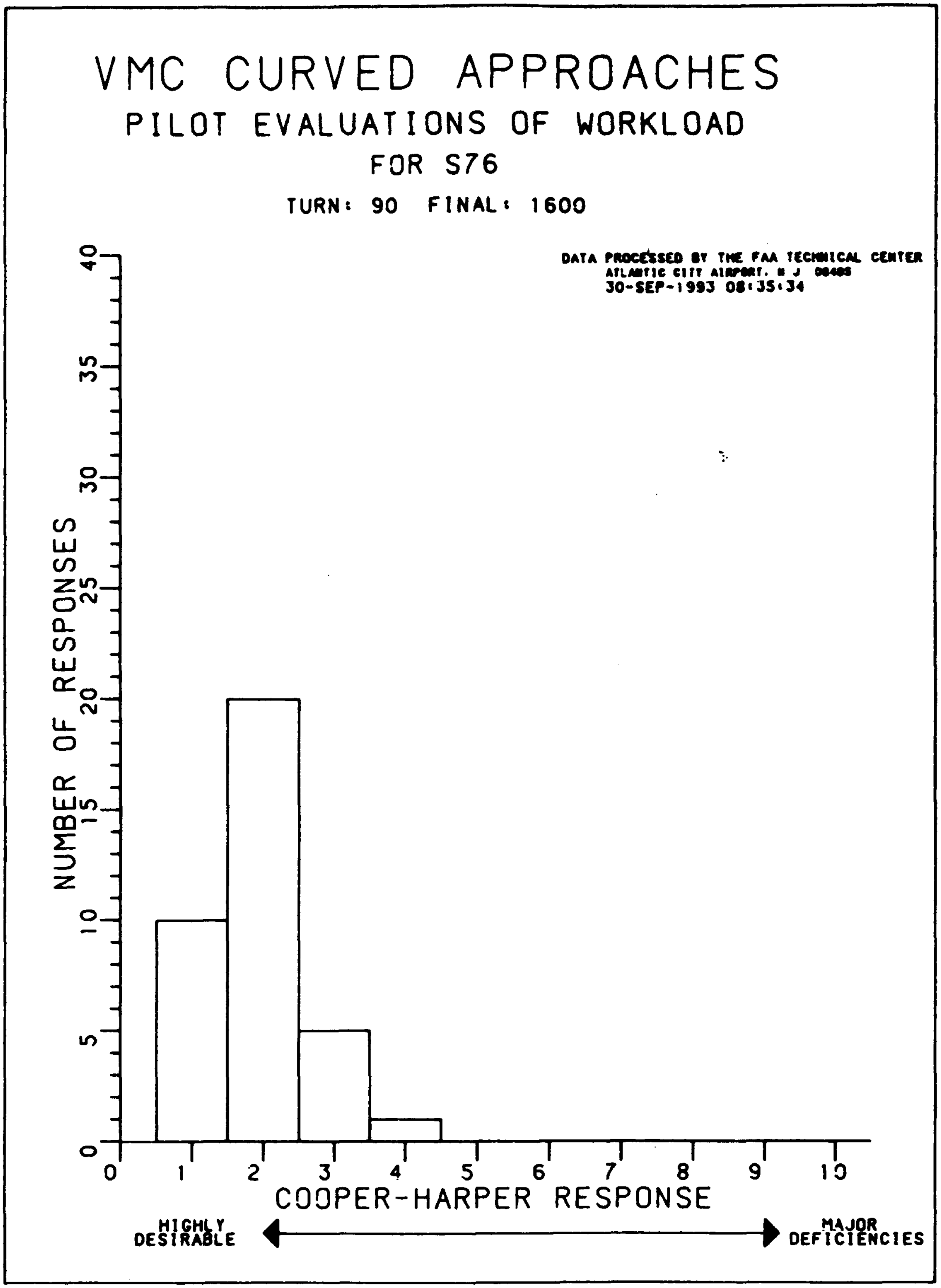
FOR S76

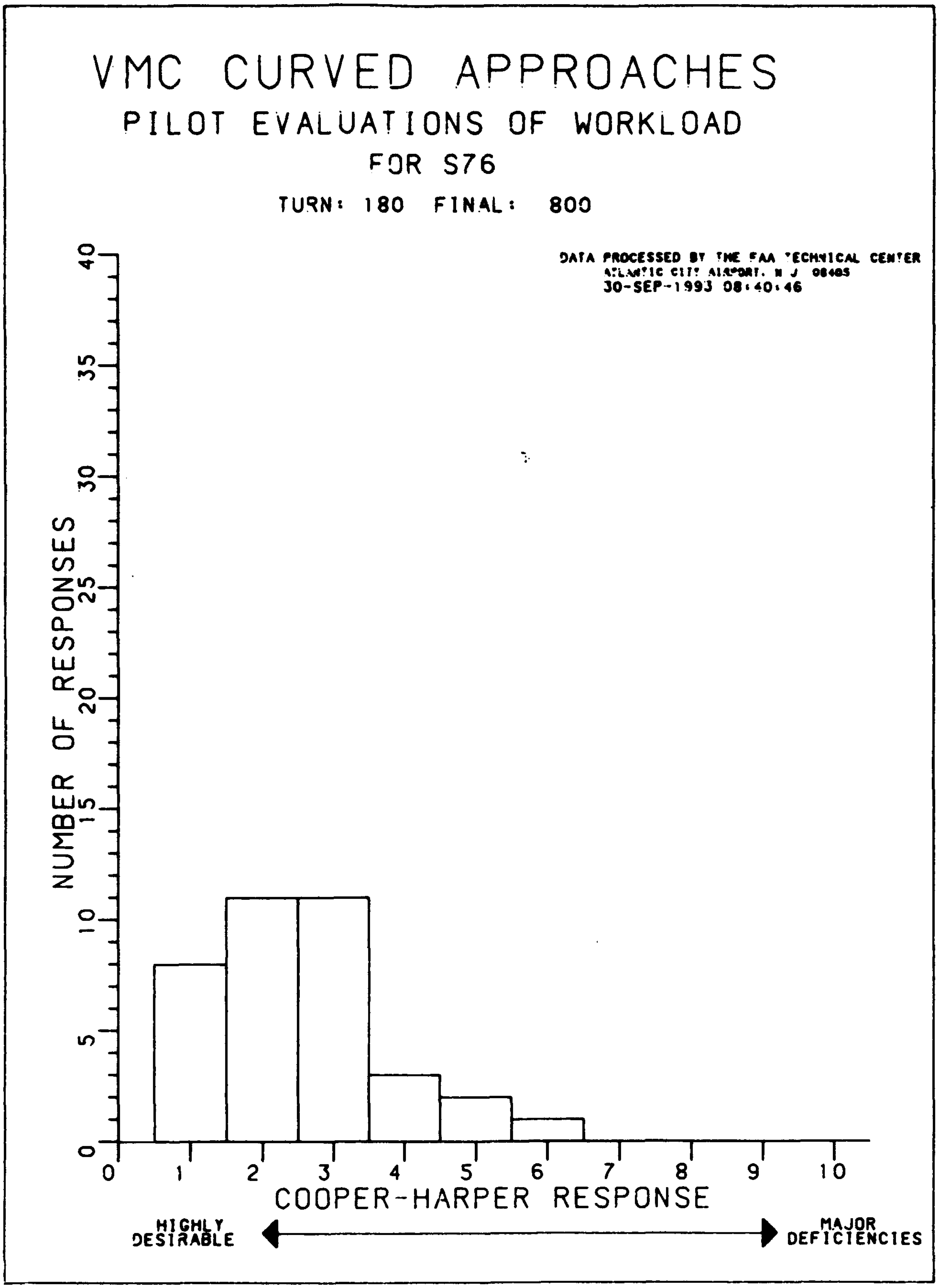
TURN: 90 FINAL: 800

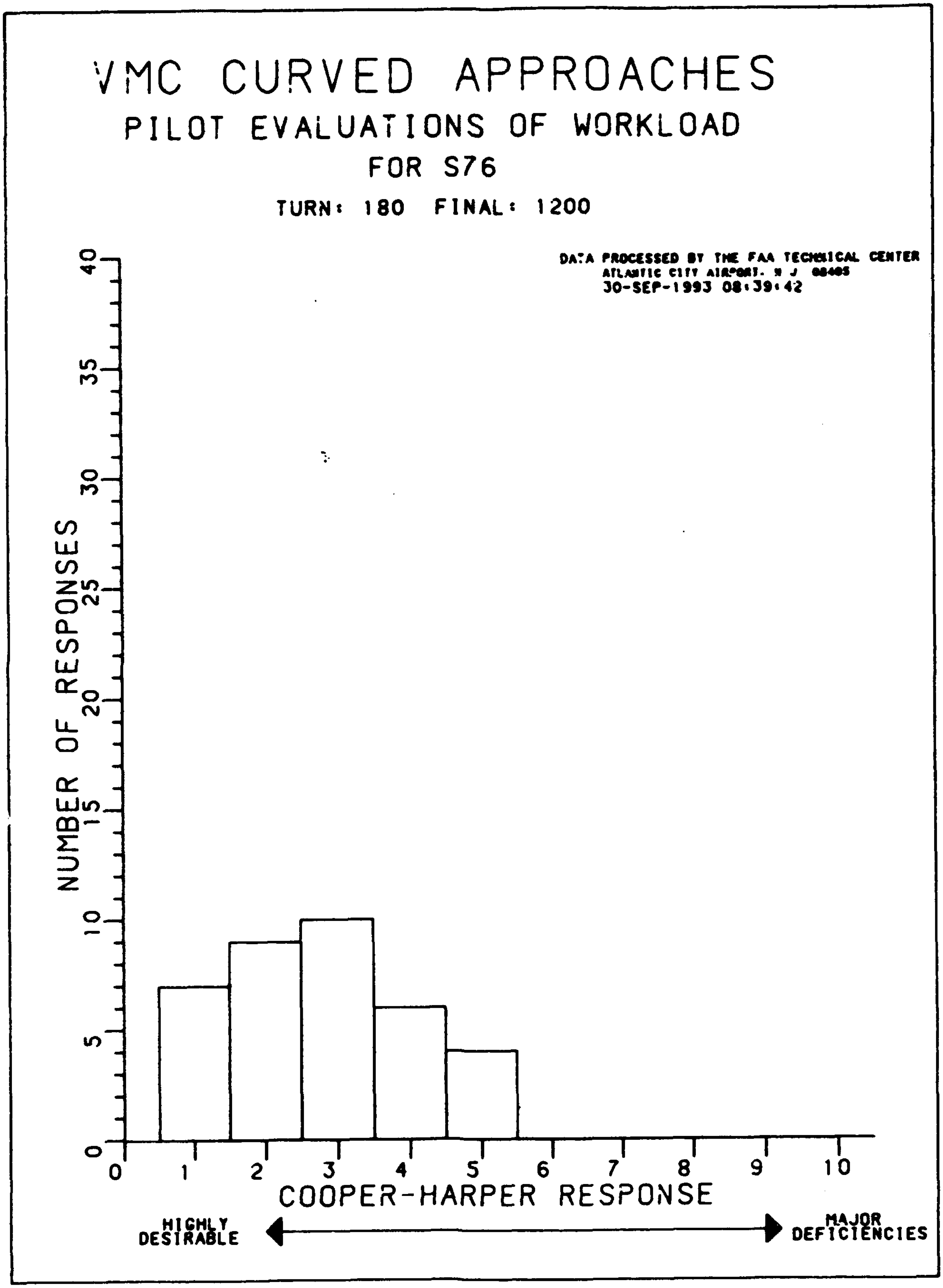


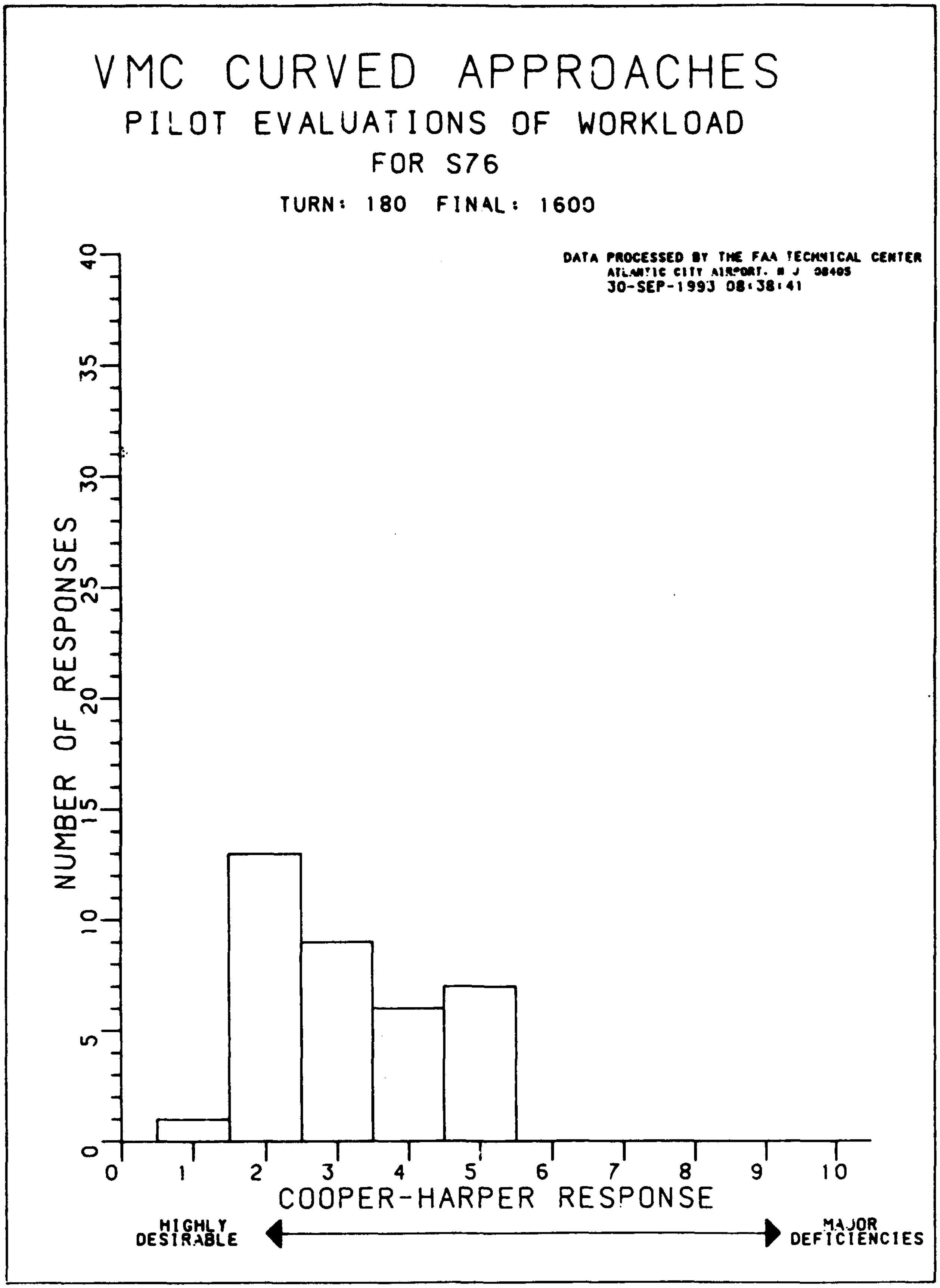


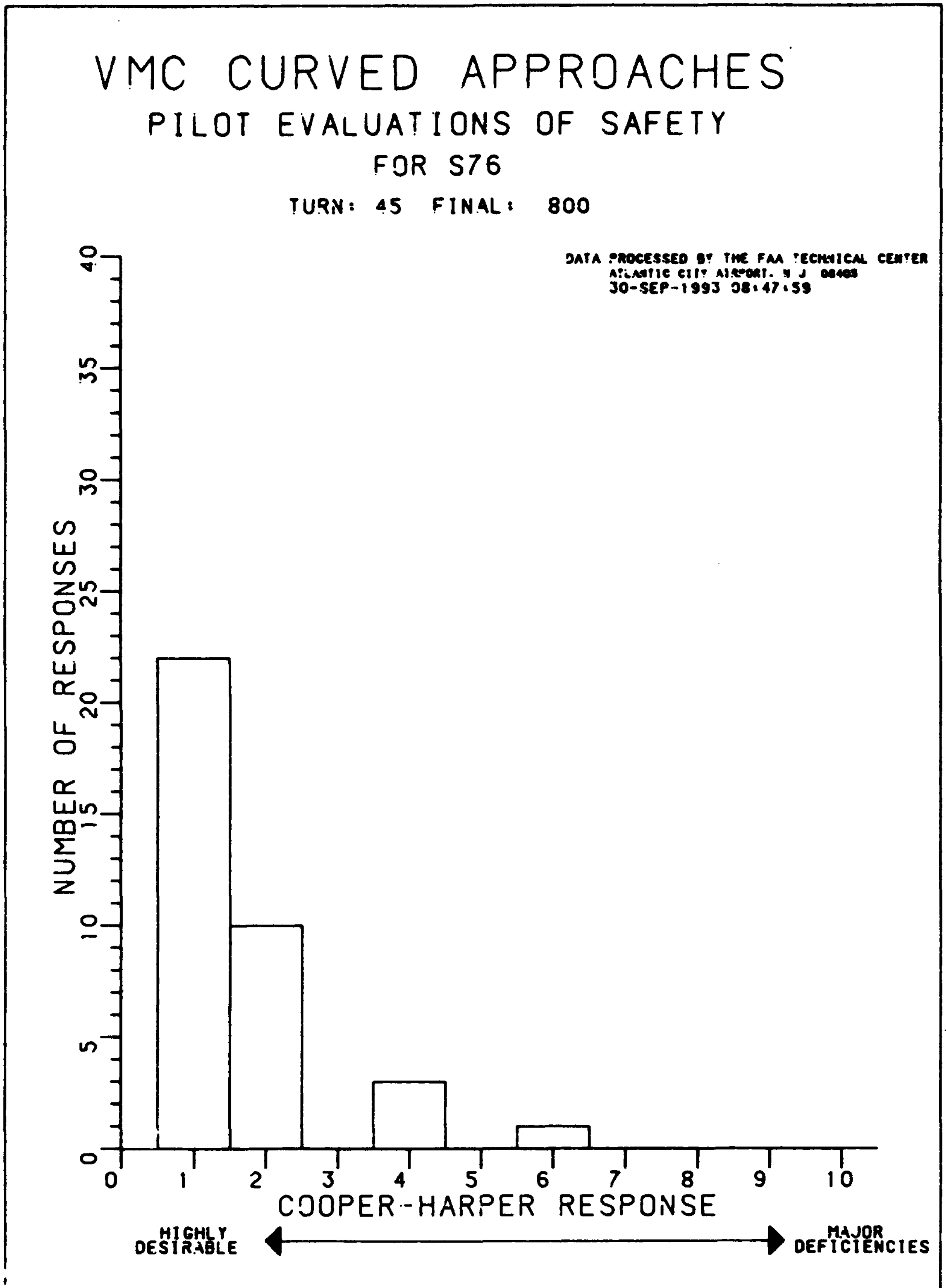
VMC CURVED APPROACHES
PILOT EVALUATIONS OF WORKLOAD
FOR S76
TURN: 90 FINAL: 1200
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 08:36:36
NUMBER OF RESPONSES
0
5
10
15
20
25
30
35
40
0
1
2
3
4
5
6
7
8
9
10
COOPER-HARPER RESPONSE
HIGHLY DESIRABLE
MAJOR DEFICIENCIES

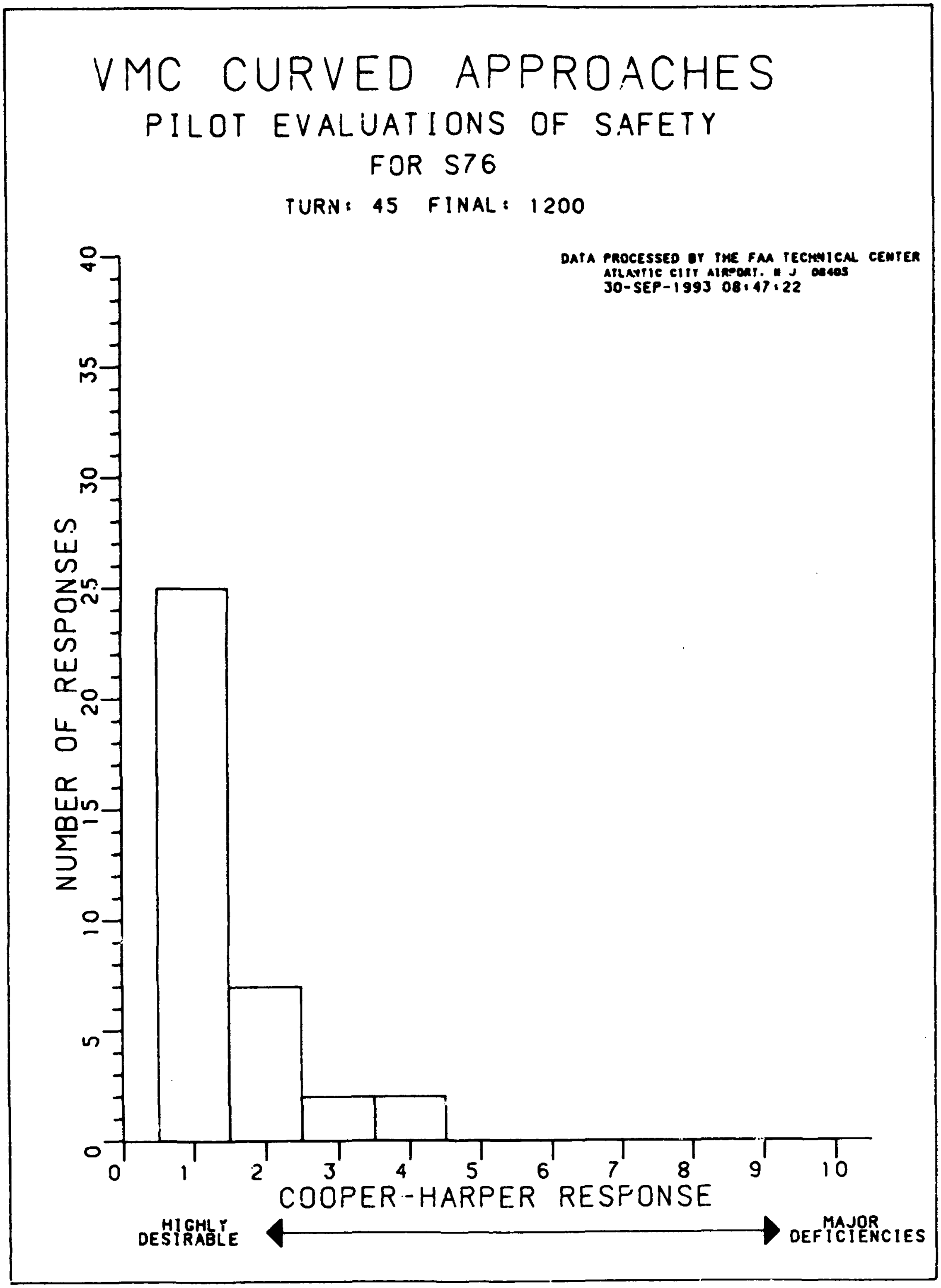

VMC CURVED APPROACHES
PILOT EVALUATIONS OF WORKLOAD
FOR S76
TURN: 90 FINAL: 1600
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 08:35:34
NUMBER OF RESPONSES
0
5
10
15
20
25
30
35
40
0
1
2
3
4
5
6
7
8
9
10
COOPER-HARPER RESPONSE
HIGHLY DESIRABLE
MAJOR DEFICIENCIES


VMC CURVED APPROACHES
PILOT EVALUATIONS OF WORKLOAD
FOR S76
TURN: 180 FINAL: 800
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 08:40:46
NUMBER OF RESPONSES
0
5
10
15
20
25
30
35
40
0
1
2
3
4
5
6
7
8
9
10
COOPER-HARPER RESPONSE
HIGHLY DESIRABLE
MAJOR DEFICIENCIES

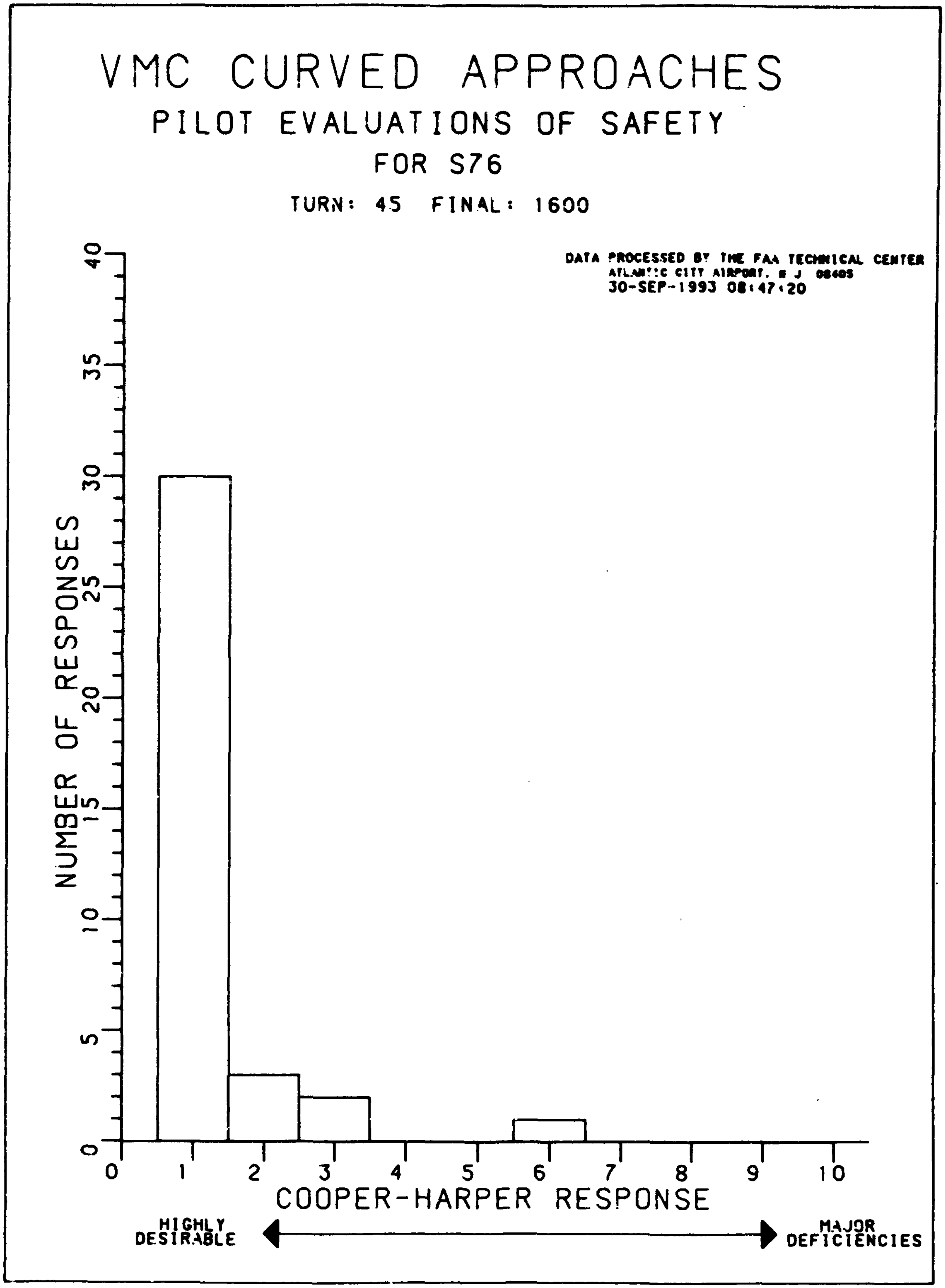

VMC CURVED APPROACHES
PILOT EVALUATIONS OF WORKLOAD
FOR S76
TURN: 180 FINAL: 1200
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 08:39:42
NUMBER OF RESPONSES
0
5
10
15
20
25
30
35
40
0
1
2
3
4
5
6
7
8
9
10
COOPER-HARPER RESPONSE
HIGHLY DESIRABLE
MAJOR DEFICIENCIES


VMC CURVED APPROACHES
PILOT EVALUATIONS OF WORKLOAD
FOR S76
TURN: 180 FINAL: 1600
DATA PROCESSED BY THE FAA TECHNICAL CENTER
30-SEP-1993 08:38:41
NUMBER OF RESPONSES
0
5
10
15
20
25
30
35
40
0
1
2
3
4
5
6
7
8
9
10
COOPER-HARPER RESPONSE
HIGHLY DESIRABLE
MAJOR DEFICIENCIES

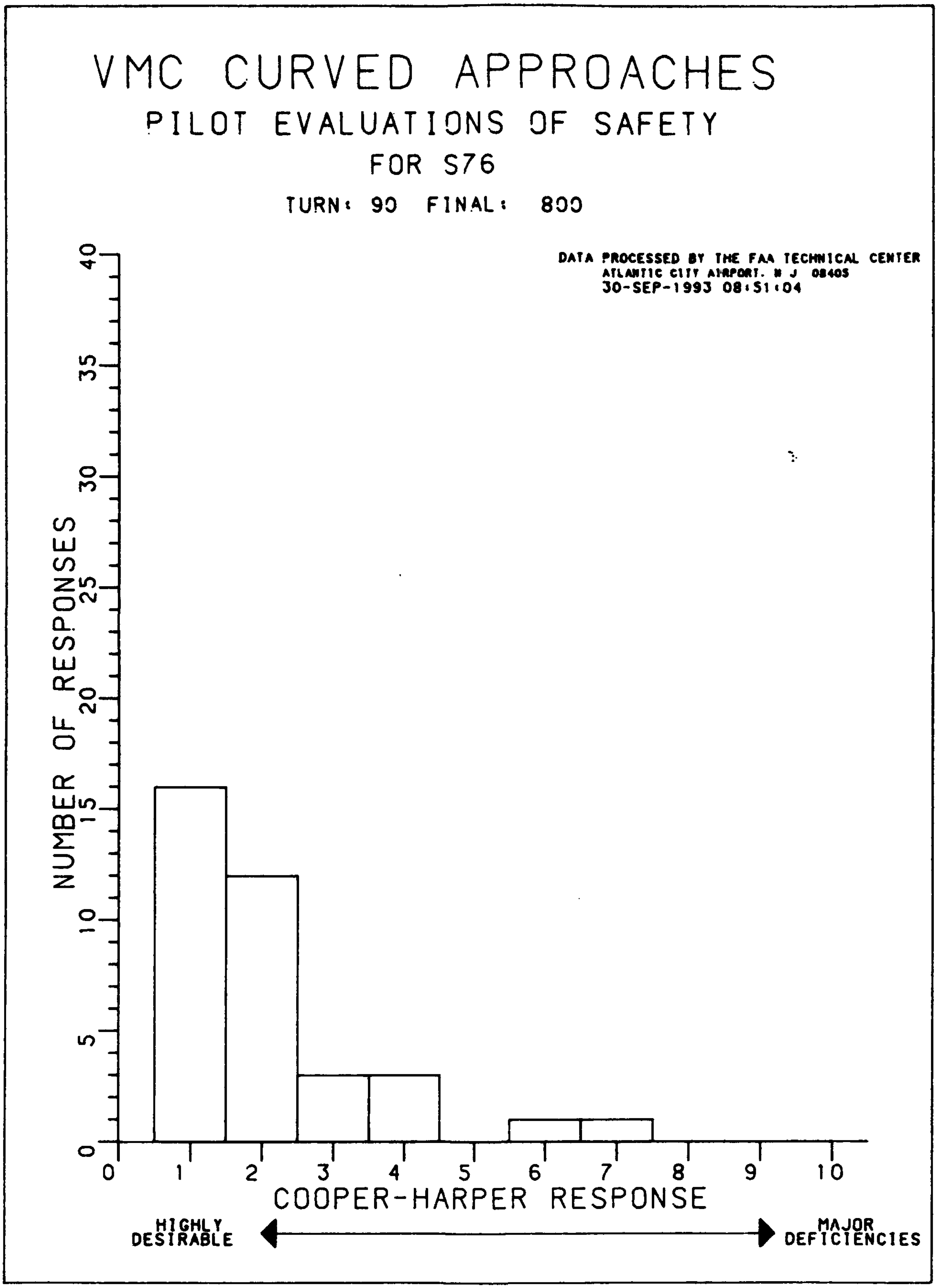

VMC CURVED APPROACHES
PILOT EVALUATIONS OF SAFETY
FOR S76
TURN: 45 FINAL: 800
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 08:47:59
NUMBER OF RESPONSES
0
5
10
15
20
25
30
35
40
0 1 2 3 4 5 6 7 8 9 10
COOPER-HARPER RESPONSE
HIGHLY DESIRABLE
MAJOR DEFICIENCIES



VMC CURVED APPROACHES
PILOT EVALUATIONS OF SAFETY
FOR S76
TURN: 45 FINAL: 1200
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 08:47:22
NUMBER OF RESPONSES
0
5
10
15
20
25
30
35
40
0
1
2
3
4
5
6
7
8
9
10
COOPER-HARPER RESPONSE
HIGHLY DESIRABLE
MAJOR DEFICIENCIES



VMC CURVED APPROACHES
PILOT EVALUATIONS OF SAFETY
FOR S76
TURN: 45 FINAL: 1600
DATA PROCESSED BY THE FAA TECHNICAL CENTER
30-SEP-1993 08:47:20
NUMBER OF RESPONSES
0
5
10
15
20
25
30
35
40
0 1 2 3 4 5 6 7 8 9 10
COOPER-HARPER RESPONSE
HIGHLY DESIRABLE
MAJOR DEFICIENCIES

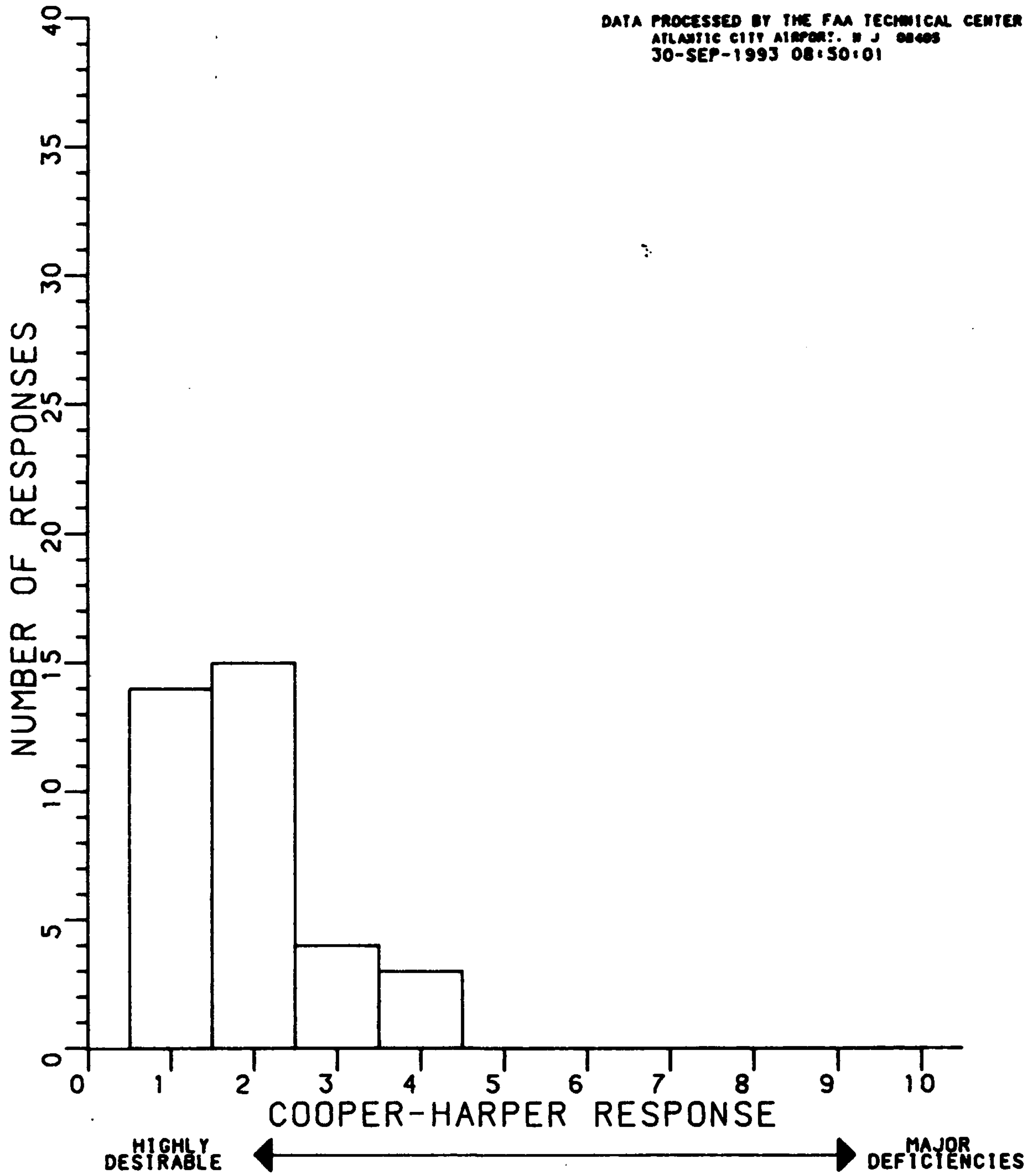

VMC CURVED APPROACHES
PILOT EVALUATIONS OF SAFETY
FOR S76
TURN: 90 FINAL: 800
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 08:51:04
NUMBER OF RESPONSES
0
5
10
15
20
25
30
35
40
0
1
2
3
4
5
6
7
8
9
10
COOPER-HARPER RESPONSE
HIGHLY DESIRABLE
MAJOR DEFICIENCIES

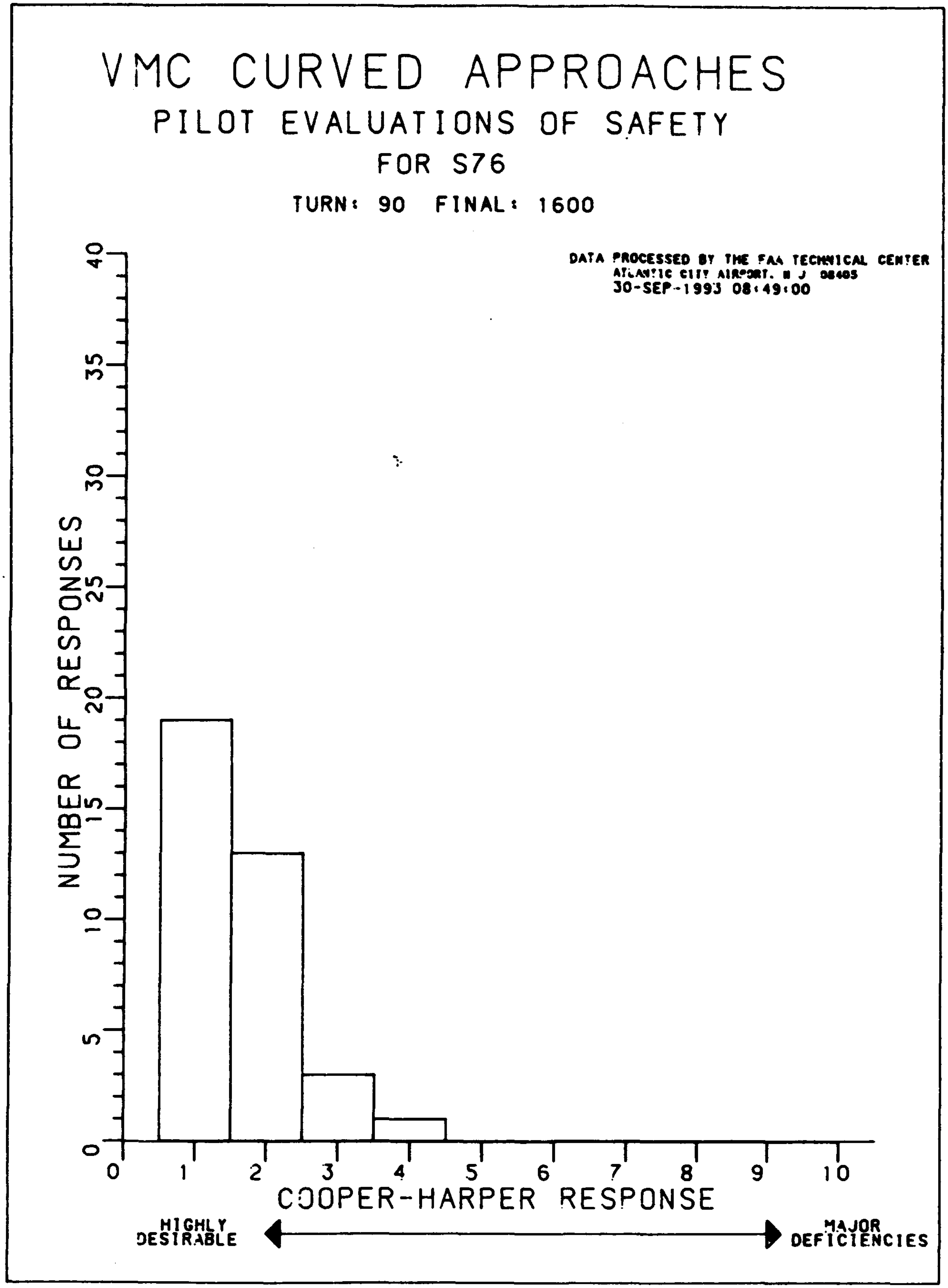
VMC CURVED APPROACHES

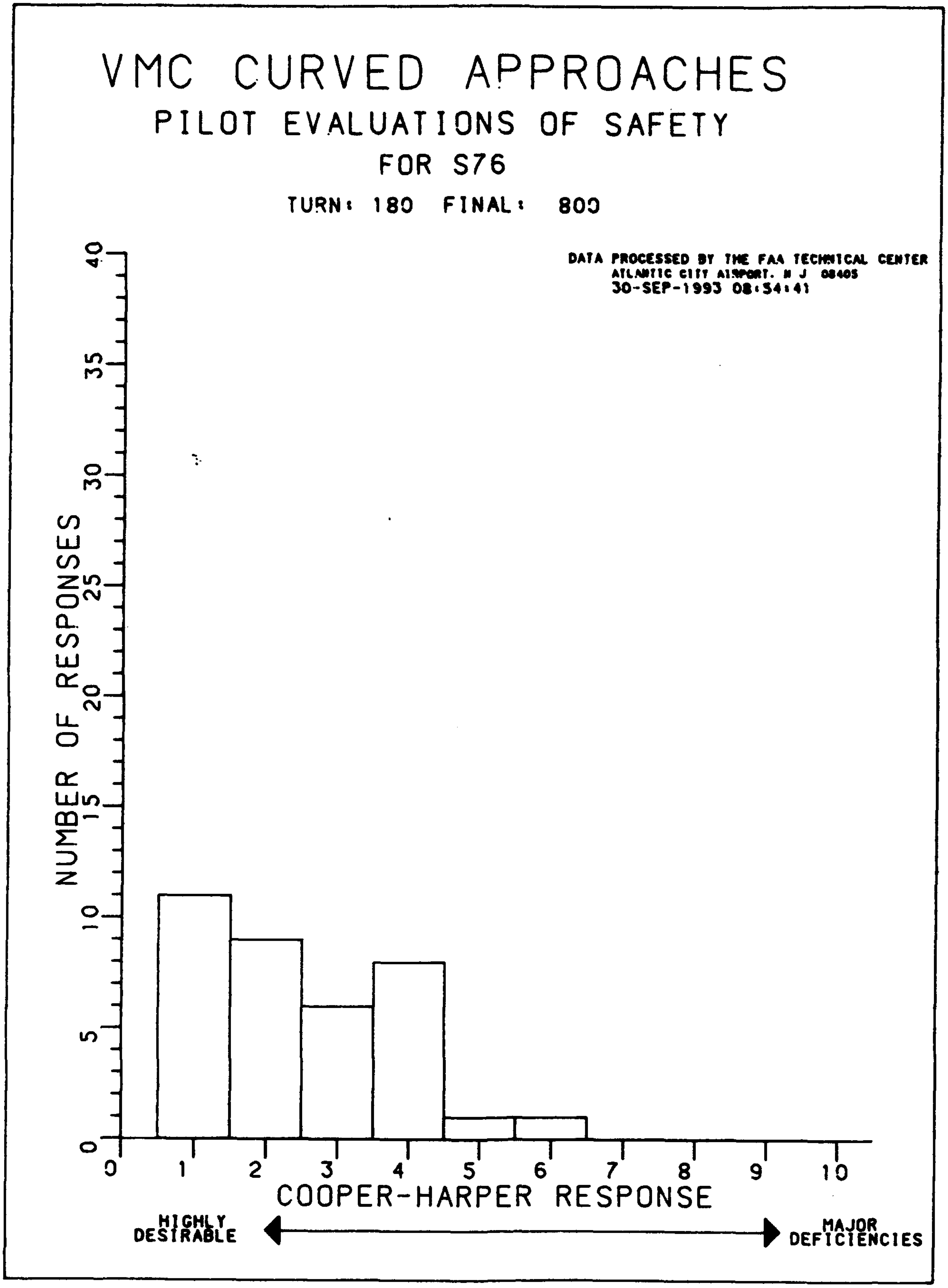
PILOT EVALUATIONS OF SAFETY

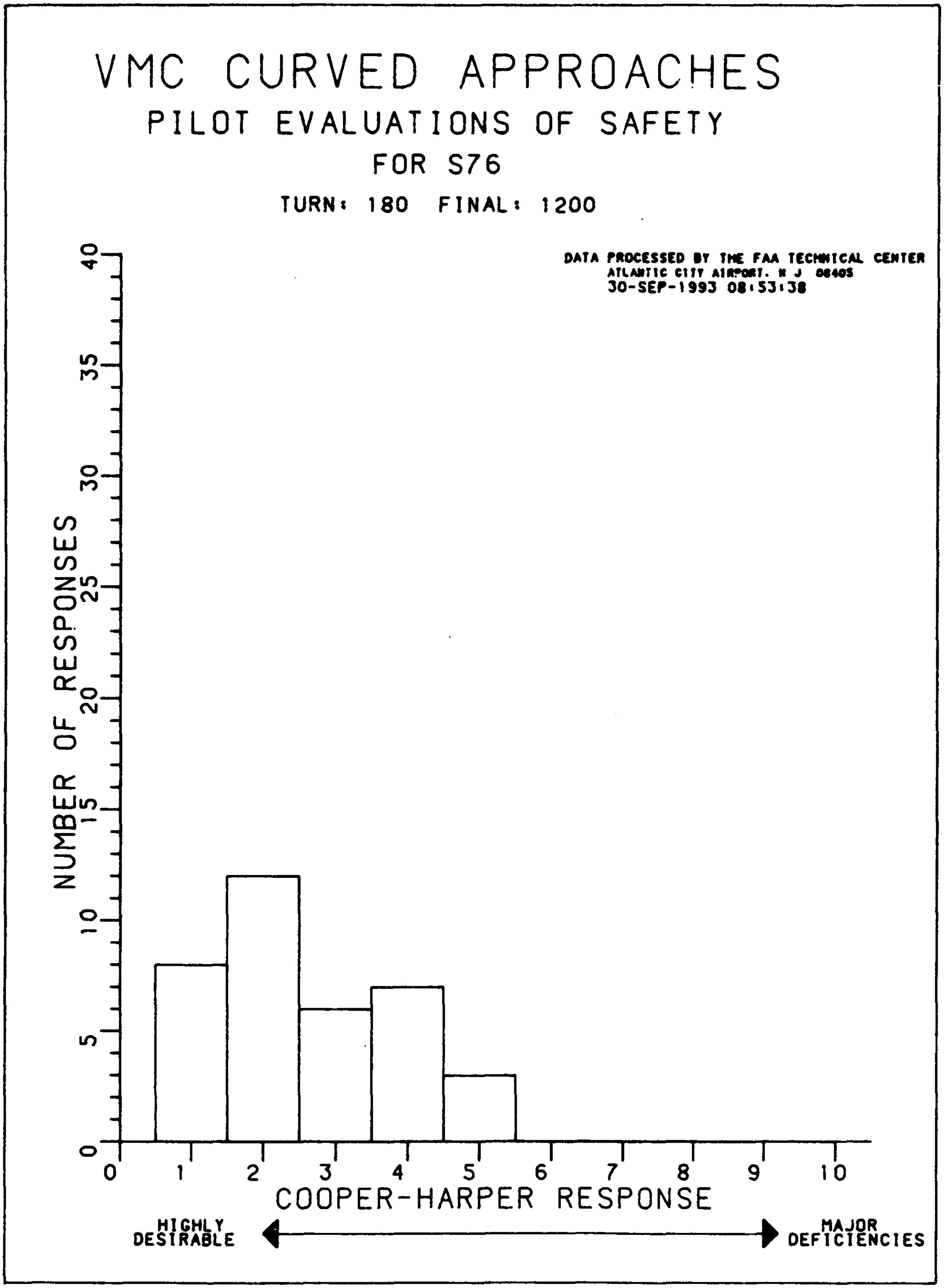
FOR S76

TURN: 90 FINAL: 1200

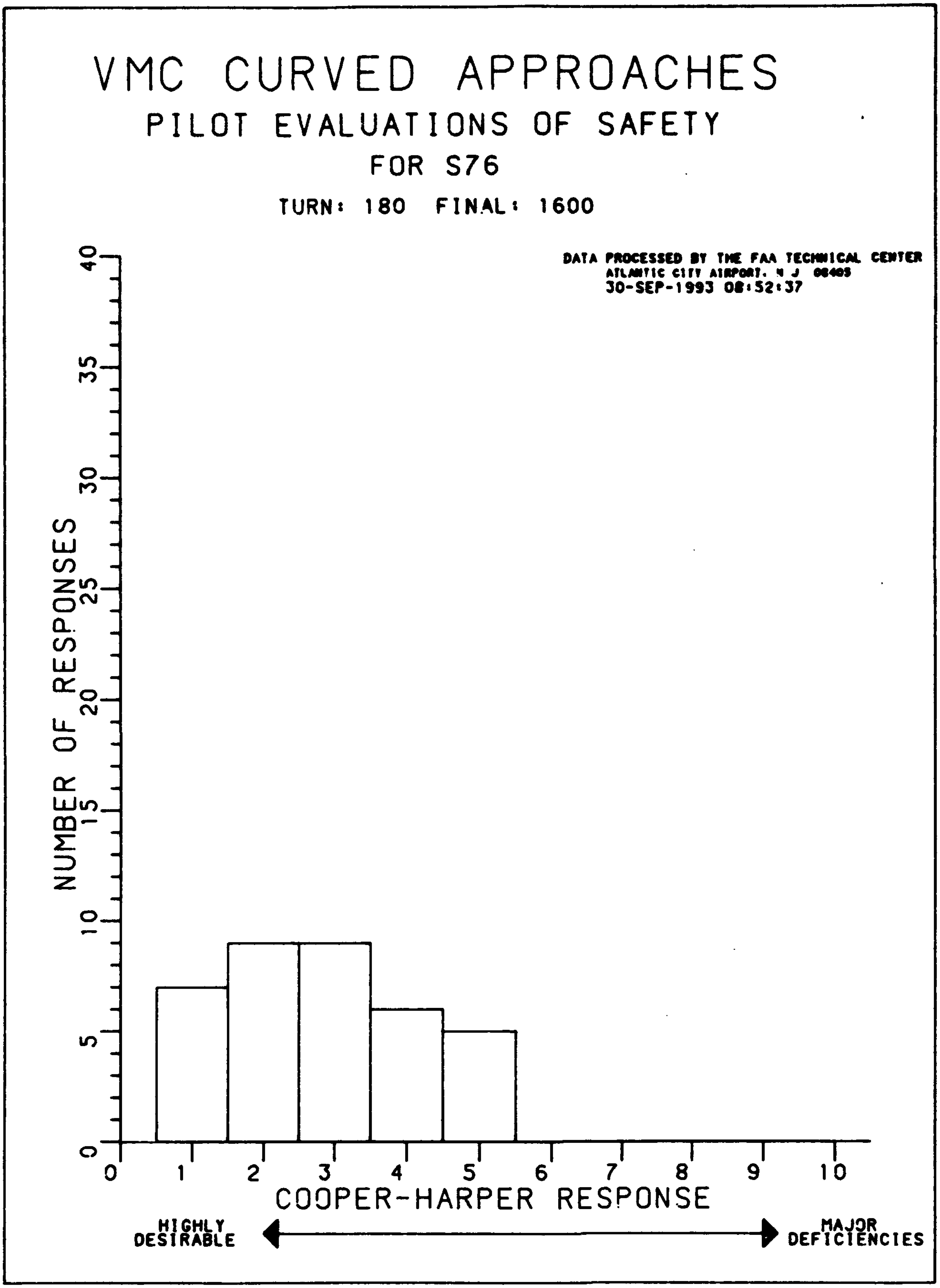



VMC CURVED APPROACHES
PILOT EVALUATIONS OF SAFETY
FOR S76
TURN: 90 FINAL: 1600
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 08:49:00
NUMBER OF RESPONSES
0
5
10
15
20
25
30
35
40
0 1 2 3 4 5 6 7 8 9 10
COOPER-HARPER RESPONSE
HIGHLY DESIRABLE
MAJOR DEFICIENCIES

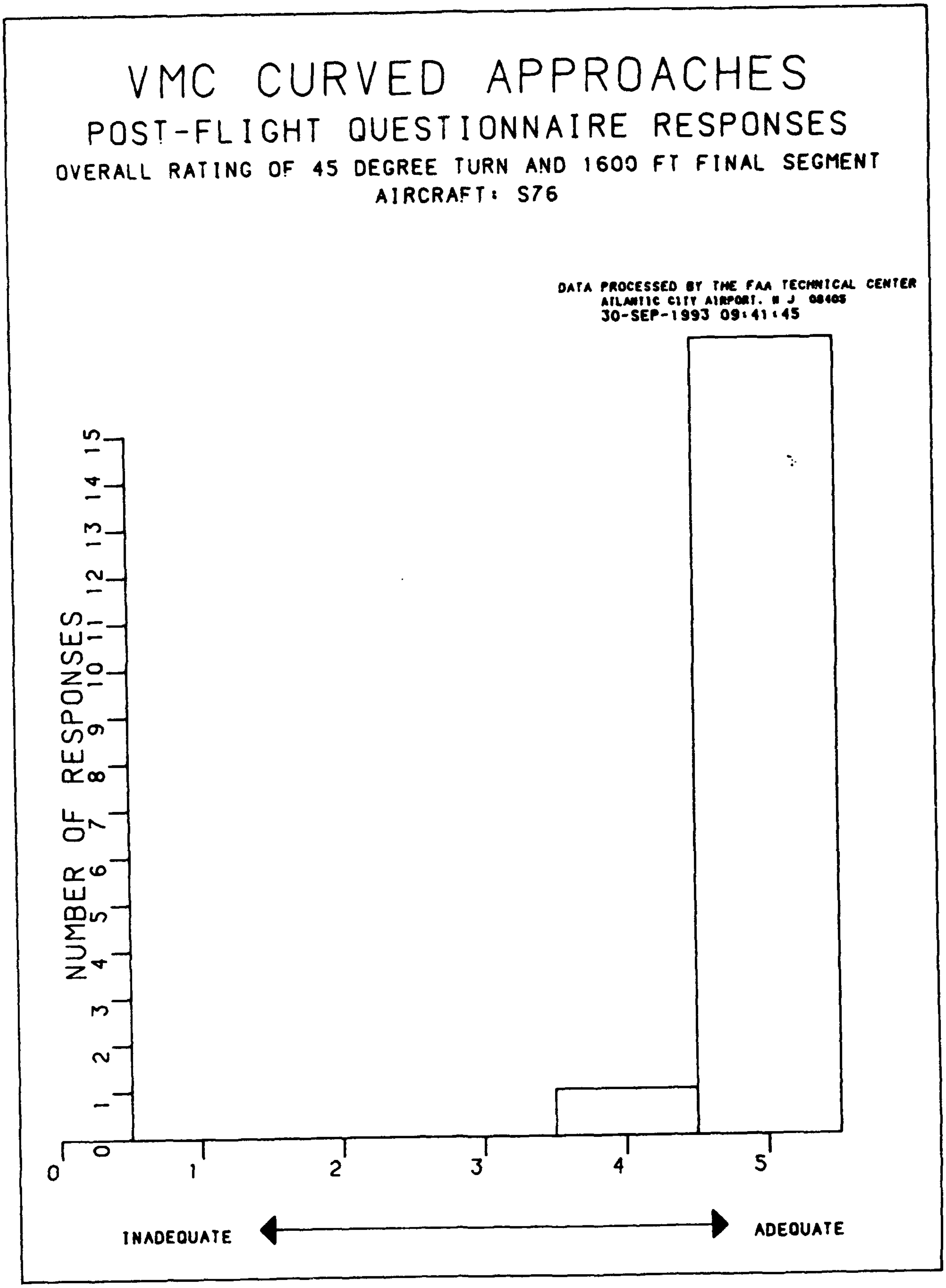

VMC CURVED APPROACHES
PILOT EVALUATIONS OF SAFETY
FOR S76
TURN: 180 FINAL: 800
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 08:54:41
NUMBER OF RESPONSES
0
5
10
15
20
25
30
35
40
0
1
2
3
4
5
6
7
8
9
10
COOPER-HARPER RESPONSE
HIGHLY DESIRABLE
MAJOR DEFICIENCIES



VMC CURVED APPROACHES
PILOT EVALUATIONS OF SAFETY
FOR S76
TURN: 180 FINAL: 1200
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 08:53:38
NUMBER OF RESPONSES
0
5
10
15
20
25
30
35
40
0
1
2
3
4
5
6
7
8
9
10
COOPER-HARPER RESPONSE
HIGHLY DESIRABLE
MAJOR DEFICIENCIES


VMC CURVED APPROACHES
PILOT EVALUATIONS OF SAFETY
FOR S76
TURN: 180 FINAL: 1600
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 08:52:37
NUMBER OF RESPONSES
0
5
10
15
20
25
30
35
40
0 1 2 3 4 5 6 7 8 9 10
COOPER-HARPER RESPONSE
HIGHLY DESIRABLE
MAJOR DEFICIENCIES

APPENDIX G
POST-FLIGHT QUESTIONAIRE PLOTS



VMC CURVED APPROACHES
POST-FLIGHT QUESTIONNAIRE RESPONSES
OVERALL RATING OF 45 DEGREE TURN AND 1600 FT FINAL SEGMENT
AIRCRAFT: S76
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 09:41:45
NUMBER OF RESPONSES
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
0
1
2
3
4
5
INADEQUATE
ADEQUATE

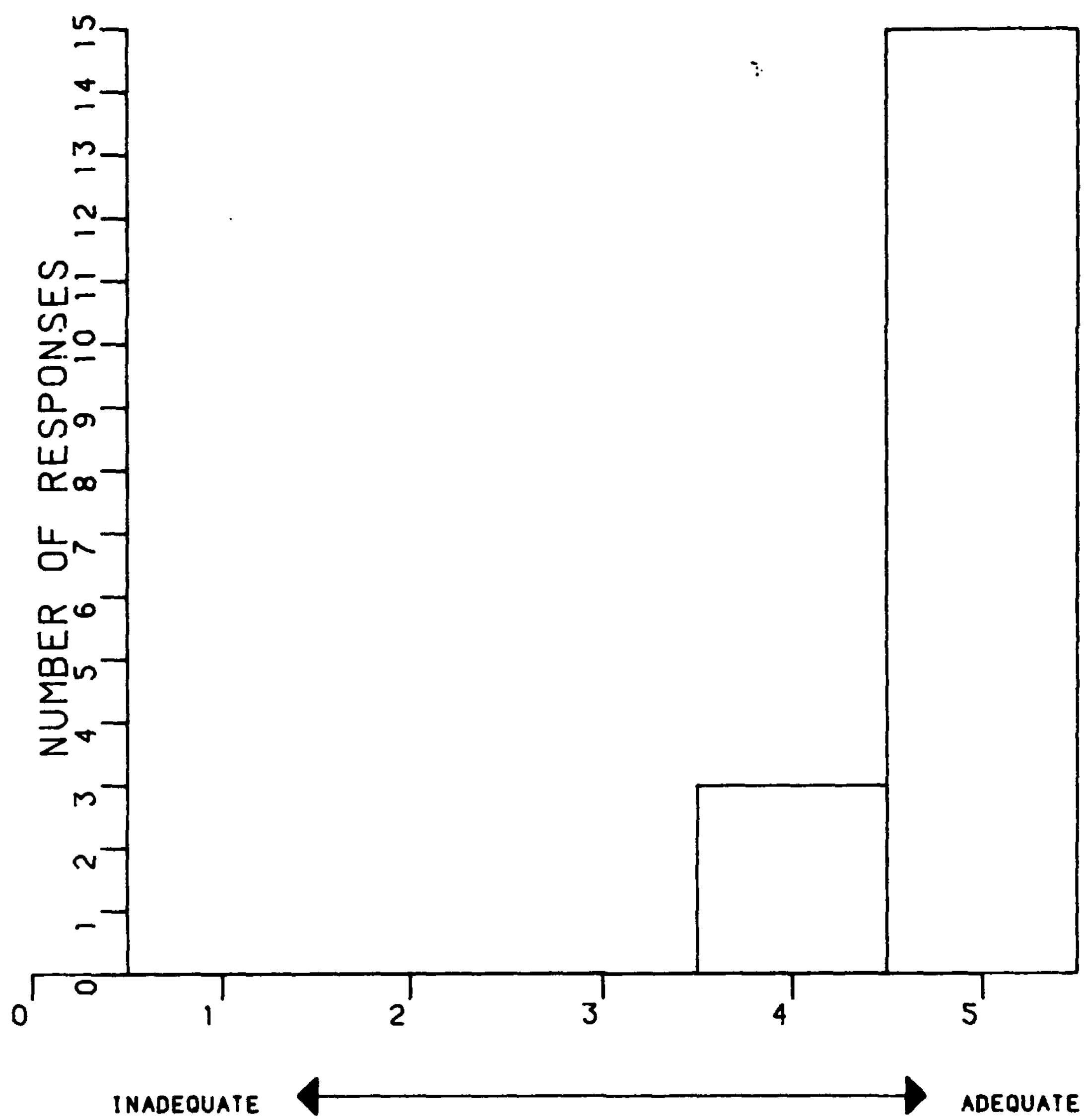
VMC CURVED APPROACHES

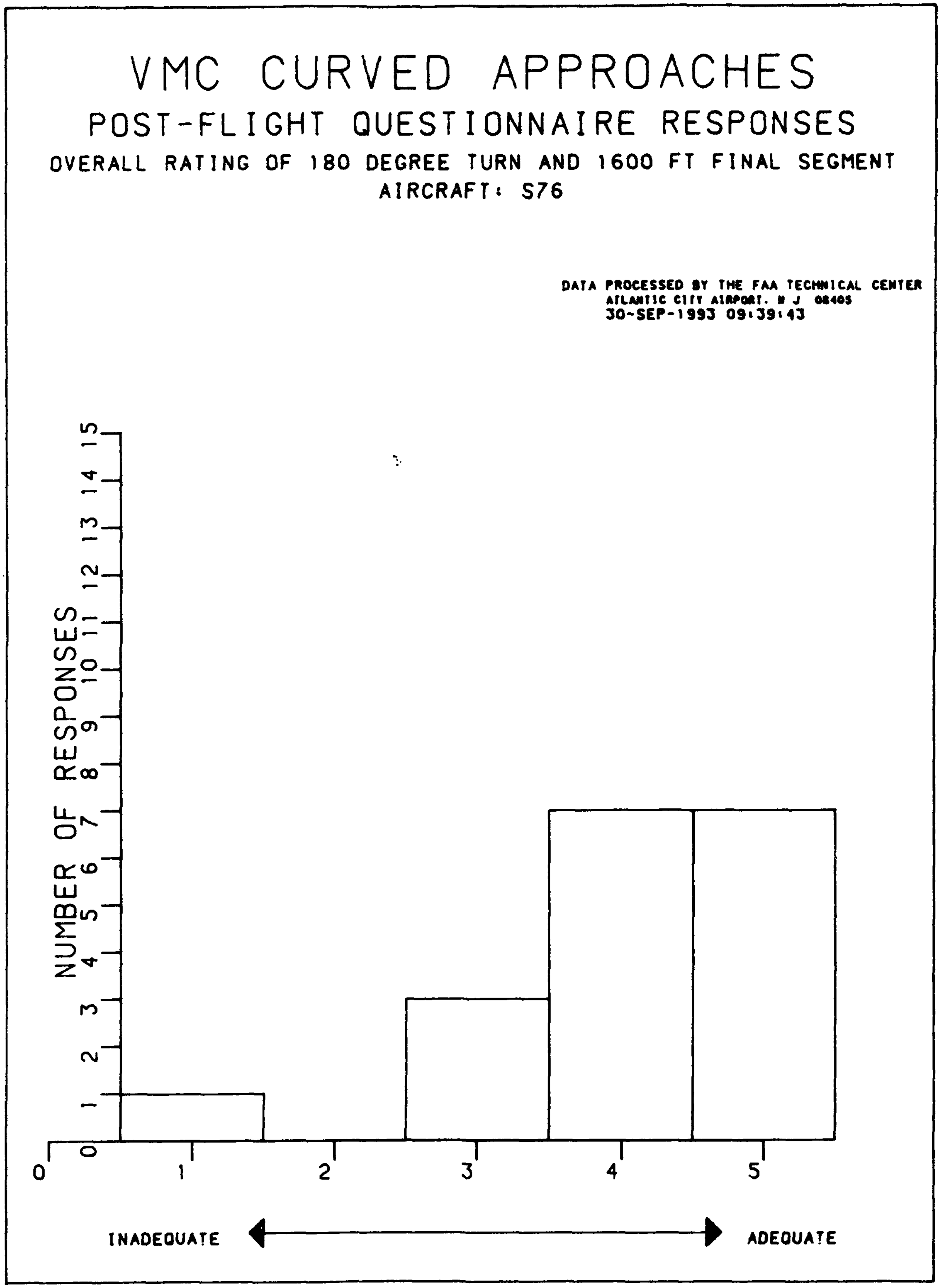
POST-FLIGHT QUESTIONNAIRE RESPONSES

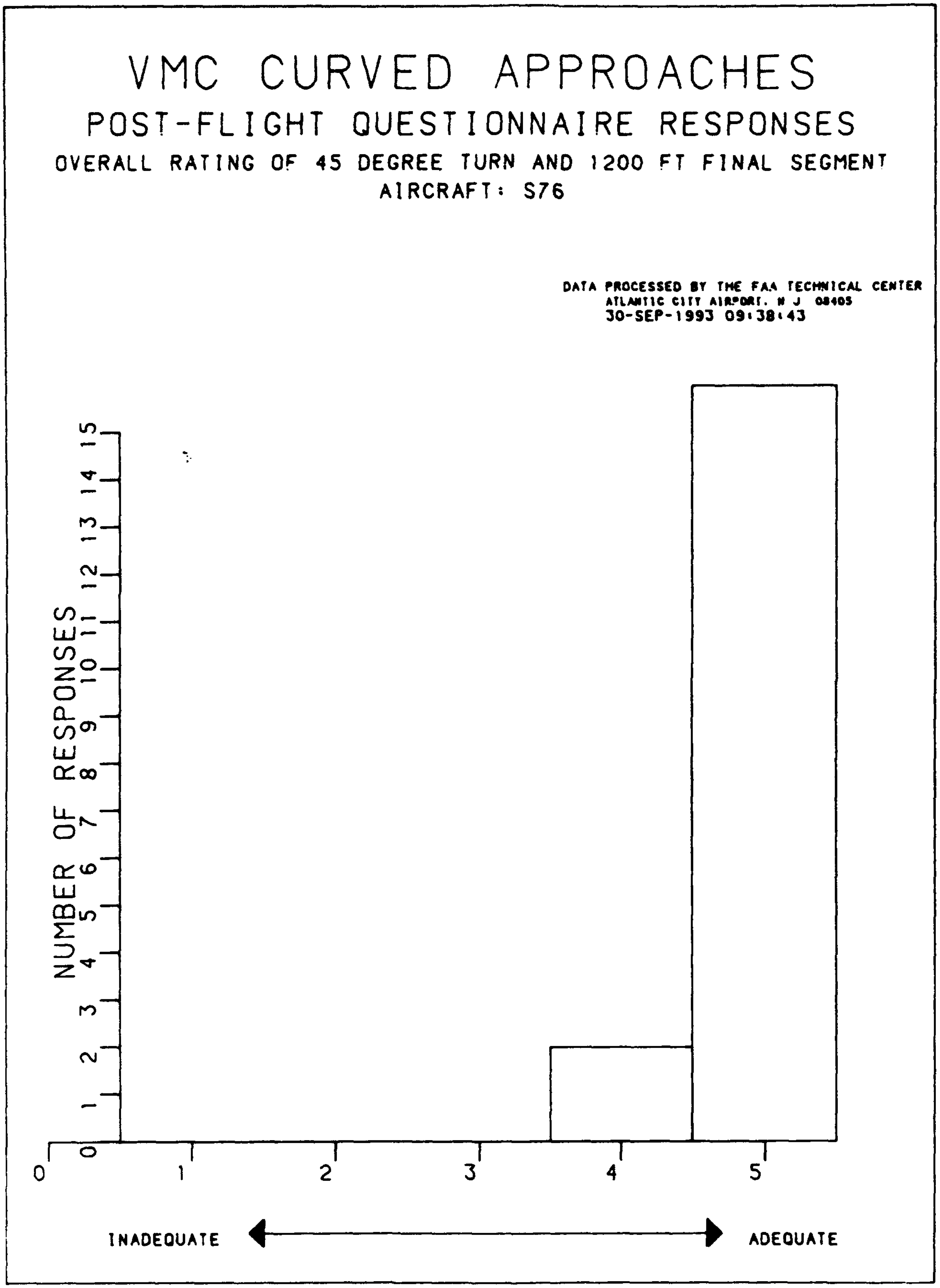
OVERALL RATING OF 90 DEGREE TURN AND 1600 FT FINAL SEGMENT

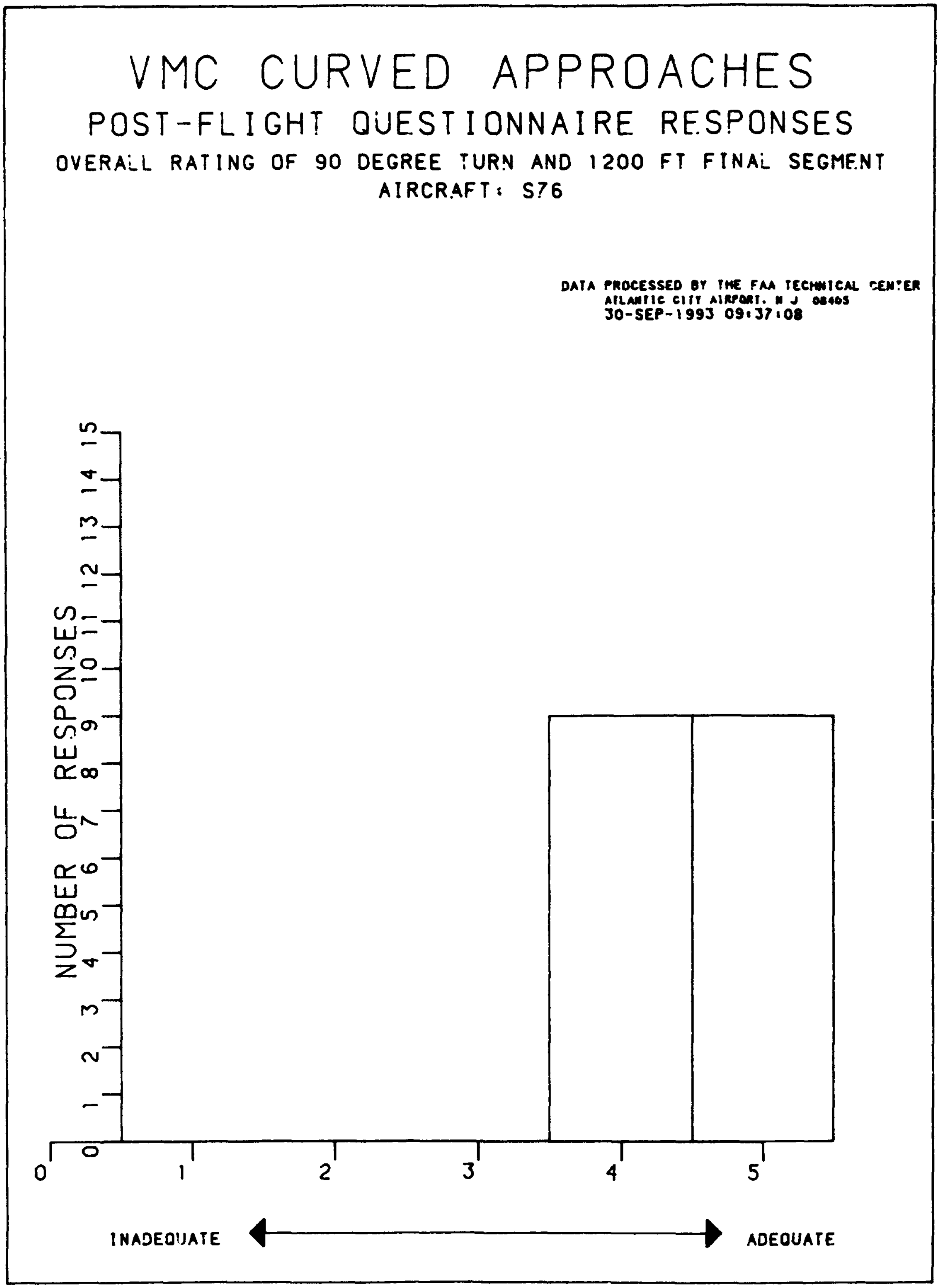
AIRCRAFT: S76

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 09:40:43




VMC CURVED APPROACHES
POST-FLIGHT QUESTIONNAIRE RESPONSES
OVERALL RATING OF 180 DEGREE TURN AND 1600 FT FINAL SEGMENT
AIRCRAFT: S76
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 09:39:43
NUMBER OF RESPONSES
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
0
1
2
3
4
5
INADEQUATE
ADEQUATE


VMC CURVED APPROACHES
POST-FLIGHT QUESTIONNAIRE RESPONSES
OVERALL RATING OF 45 DEGREE TURN AND 1200 FT FINAL SEGMENT
AIRCRAFT: S76
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 09:38:43
NUMBER OF RESPONSES
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
0
1
2
3
4
5
INADEQUATE
ADEQUATE


VMC CURVED APPROACHES
POST-FLIGHT QUESTIONNAIRE RESPONSES
OVERALL RATING OF 90 DEGREE TURN AND 1200 FT FINAL SEGMENT
AIRCRAFT: S76
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 09:37:08
NUMBER OF RESPONSES
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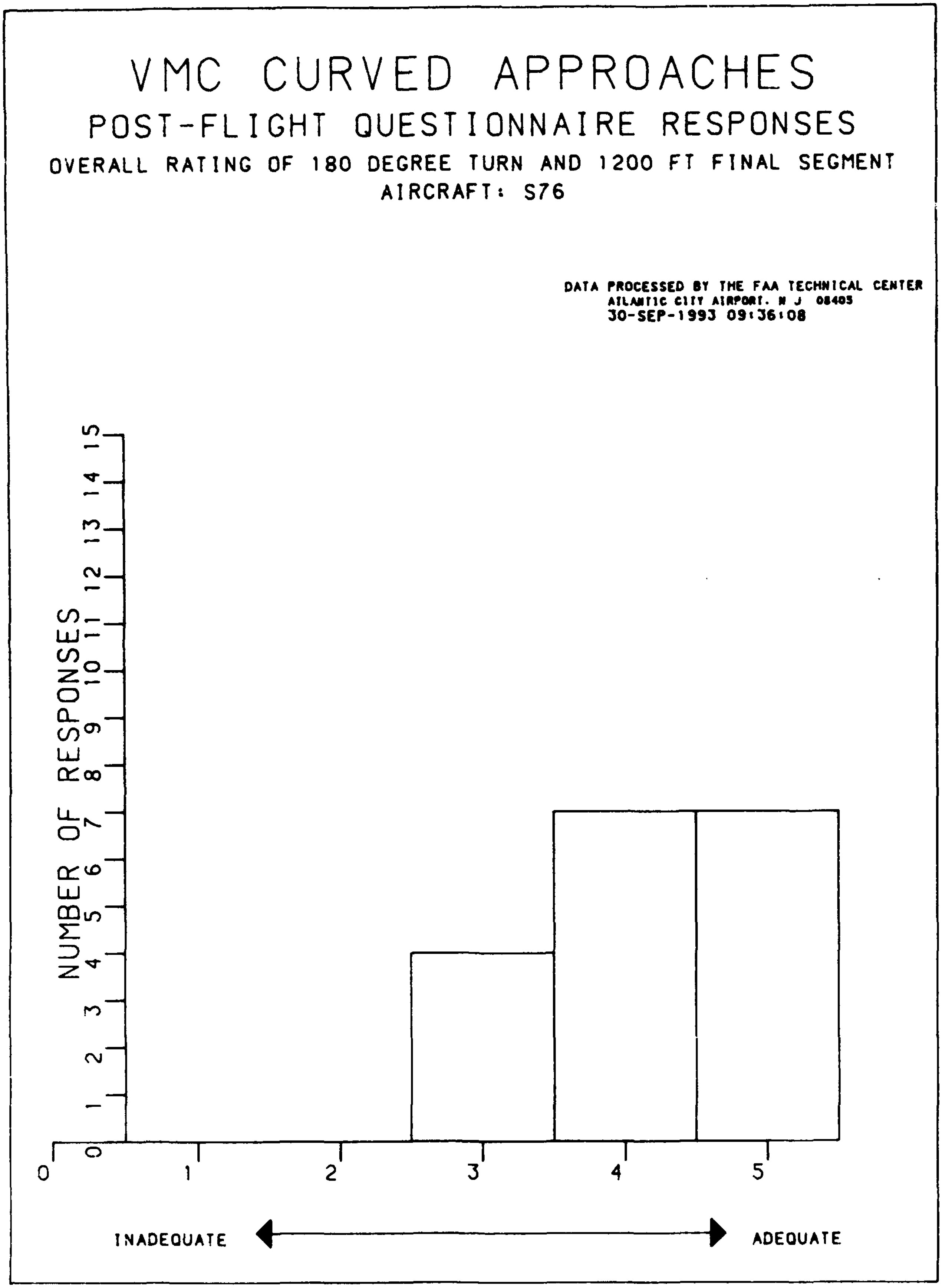
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
INADEQUATE
ADEQUATE



VMC CURVED APPROACHES
POST-FLIGHT QUESTIONNAIRE RESPONSES
OVERALL RATING OF 180 DEGREE TURN AND 1200 FT FINAL SEGMENT
AIRCRAFT: S76
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 09:36:08
NUMBER OF RESPONSES
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
0
1
2
3
4
5
INADEQUATE
ADEQUATE

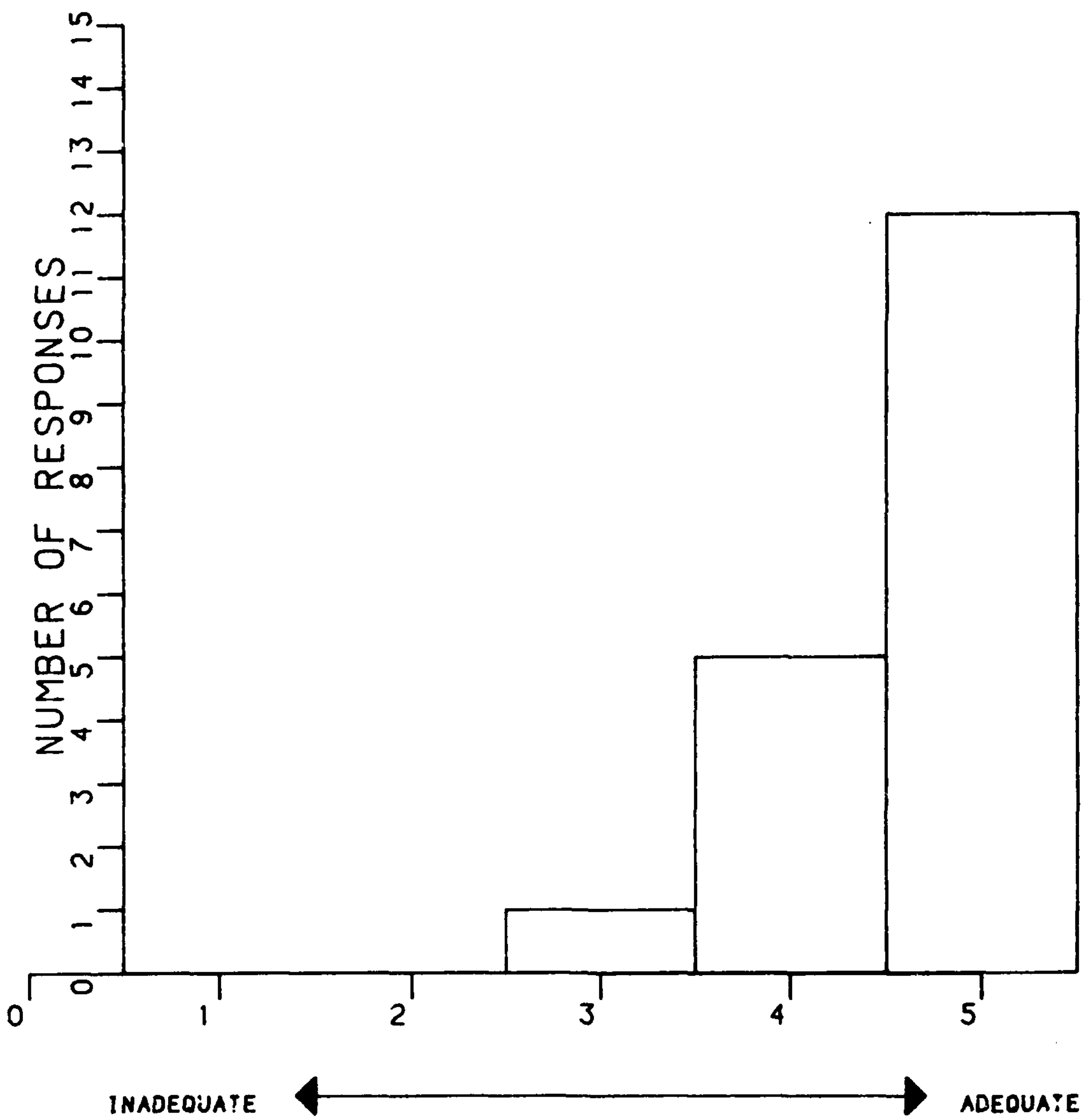
VMC CURVED APPROACHES

POST-FLIGHT QUESTIONNAIRE RESPONSES

OVERALL RATING OF 45 DEGREE TURN AND 800 FT FINAL SEGMENT

AIRCRAFT: S76

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 09:35:08



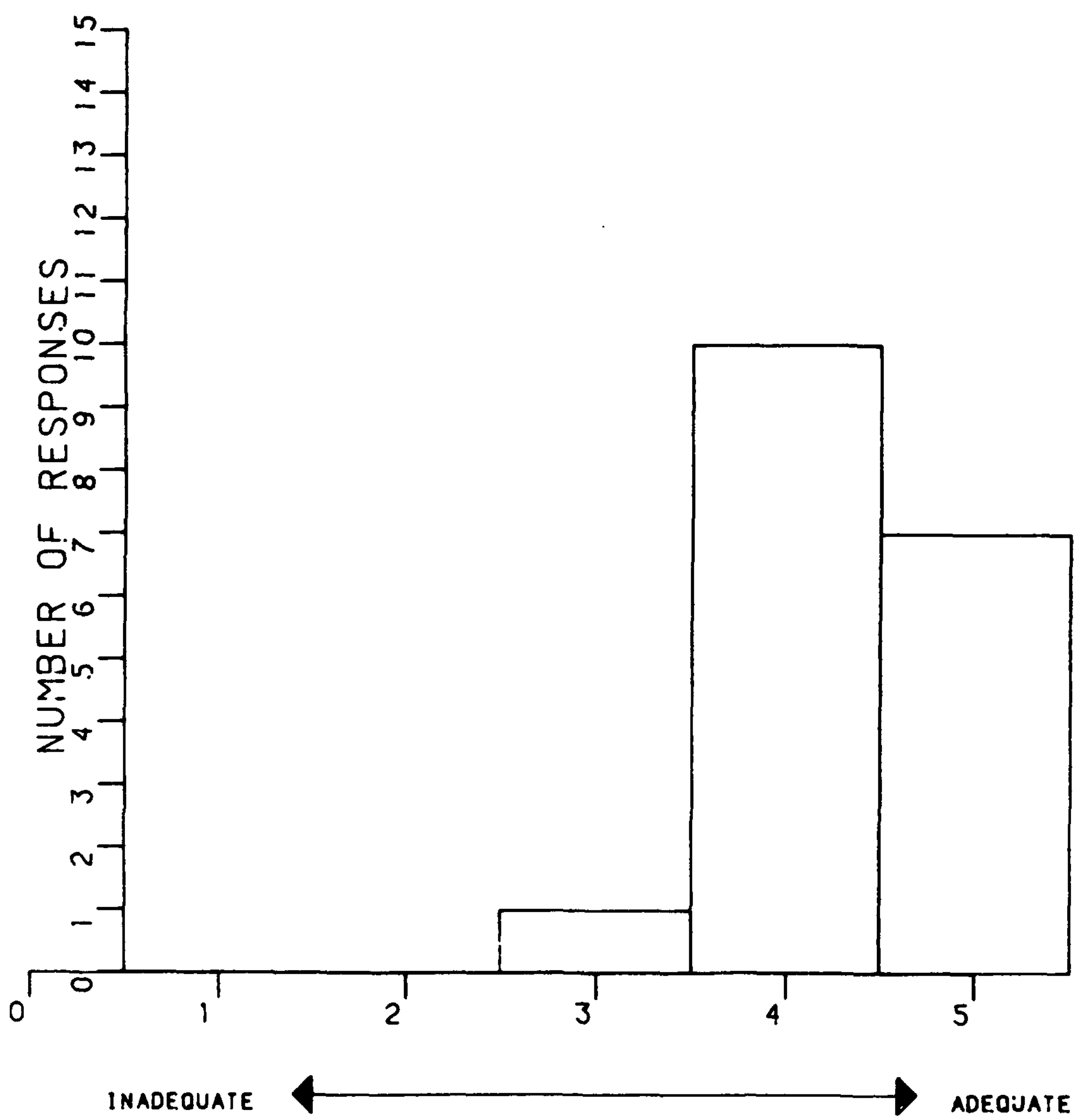
VMC CURVED APPROACHES

POST-FLIGHT QUESTIONNAIRE RESPONSES

OVERALL RATING OF 90 DEGREE TURN AND 800 FT FINAL SEGMENT

AIRCRAFT: S76

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 09:34:07



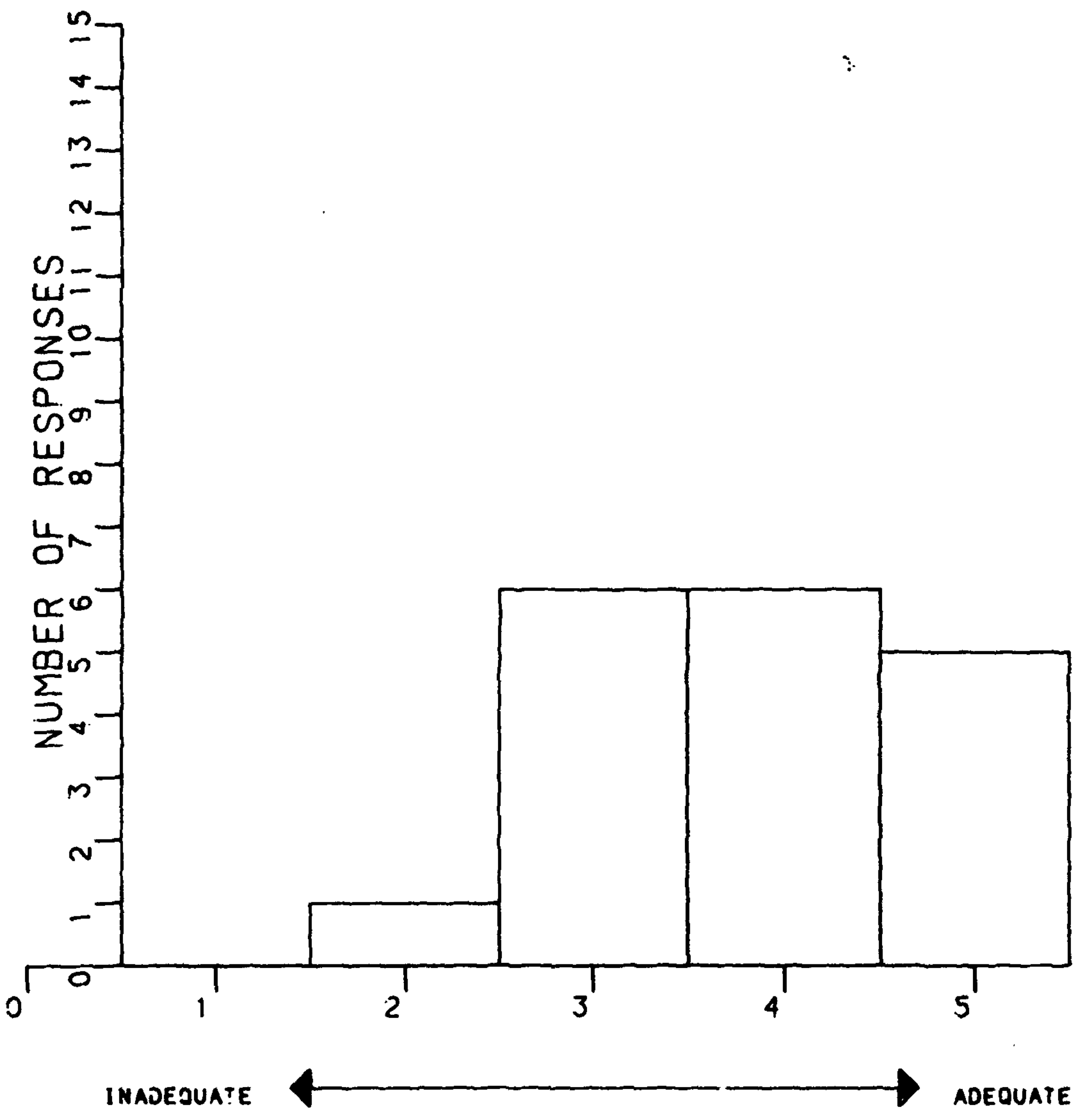
VMC CURVED APPROACHES

POST-FLIGHT QUESTIONNAIRE RESPONSES

OVERALL RATING OF 180 DEGREE TURN AND 800 FT FINAL SEGMENT

AIRCRAFT: S76

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 09:33:07

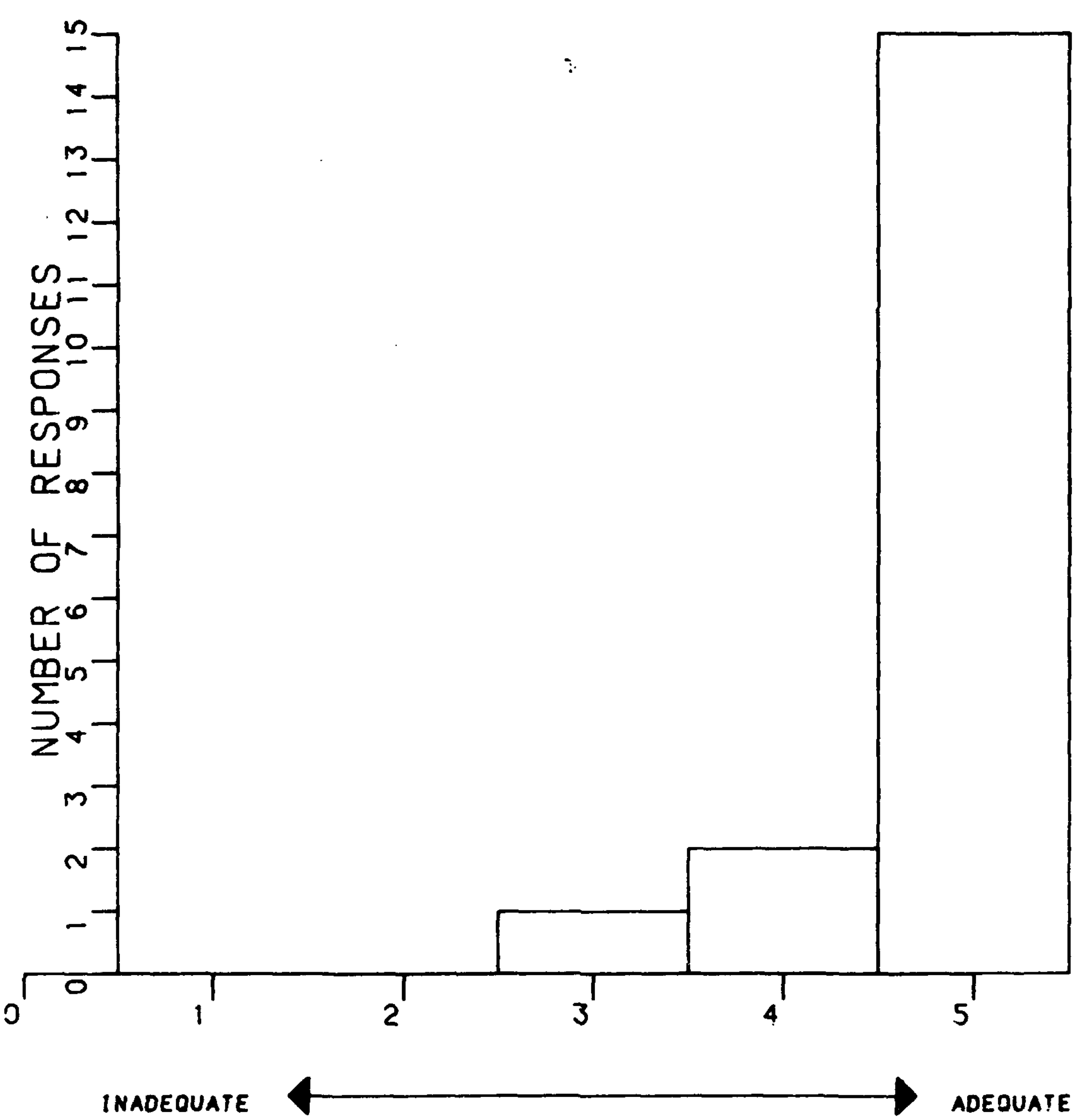


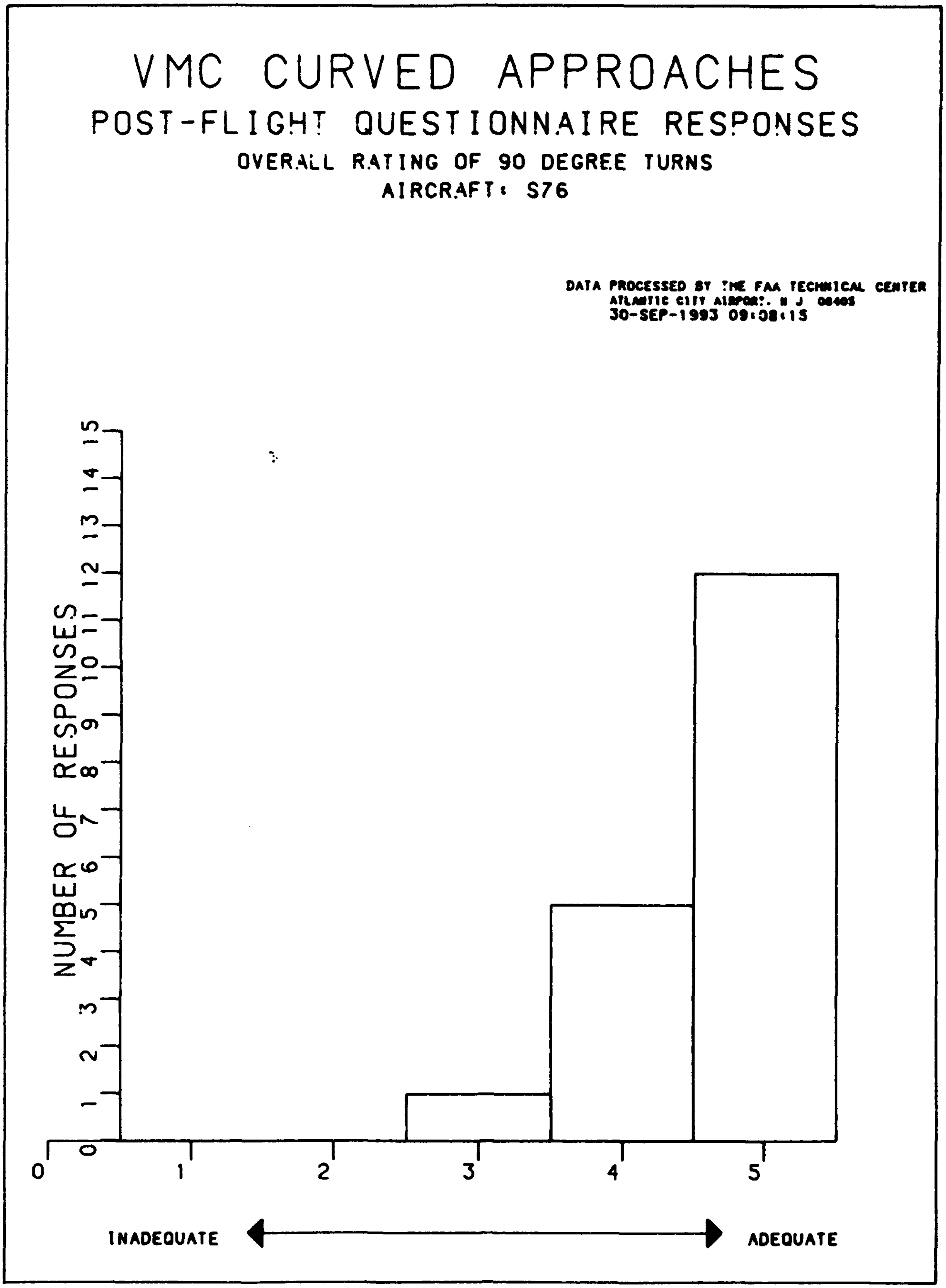
VMC CURVED APPROACHES

POST-FLIGHT QUESTIONNAIRE RESPONSES

OVERALL RATING OF 45 DEGREE TURNS
AIRCRAFT: S76

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 09:08:12





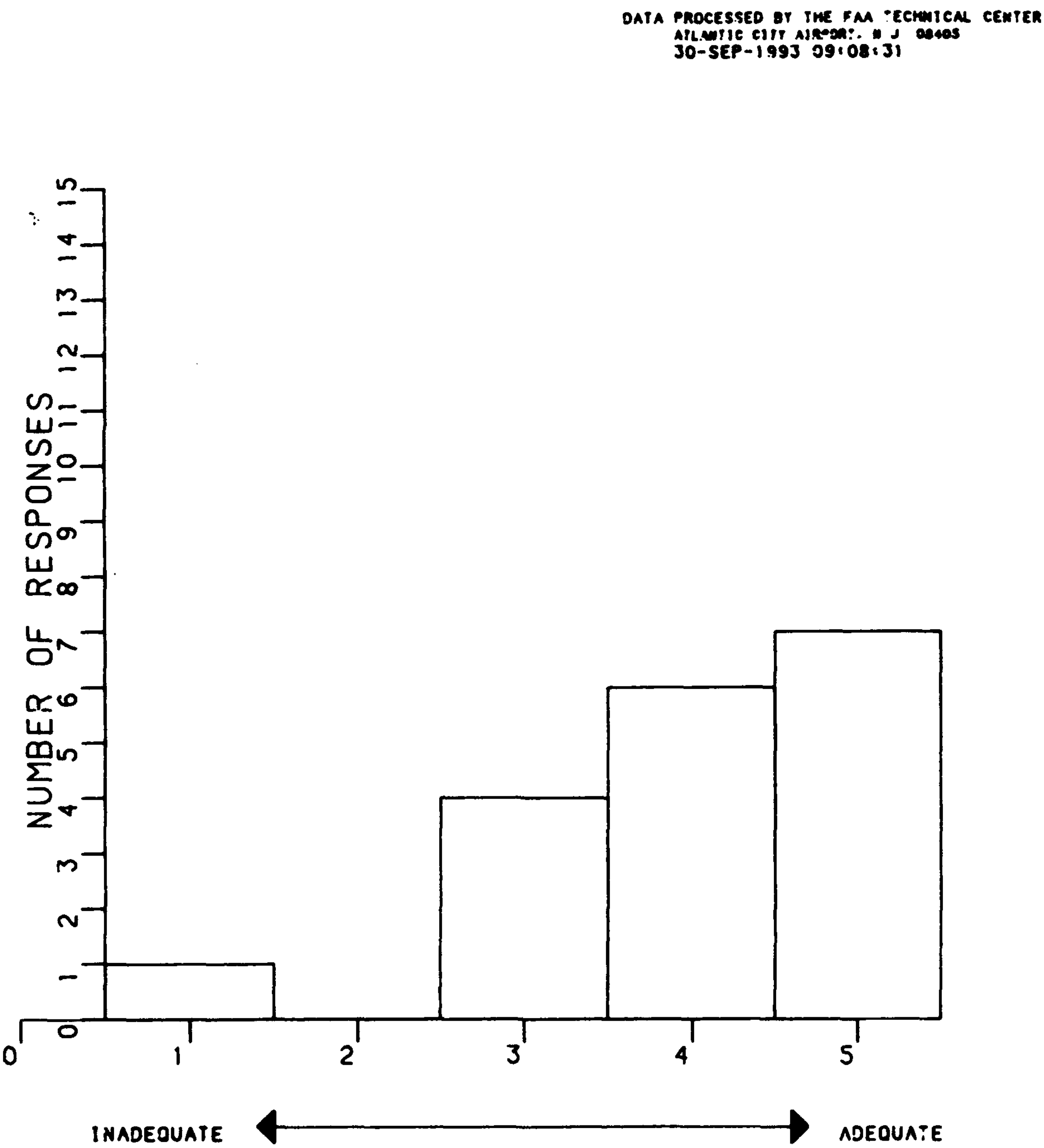
VMC CURVED APPROACHES
POST-FLIGHT QUESTIONNAIRE RESPONSES
OVERALL RATING OF 90 DEGREE TURNS
AIRCRAFT: S76
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 09:08:15
NUMBER OF RESPONSES
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
0
1
2
3
4
5
INADEQUATE
ADEQUATE

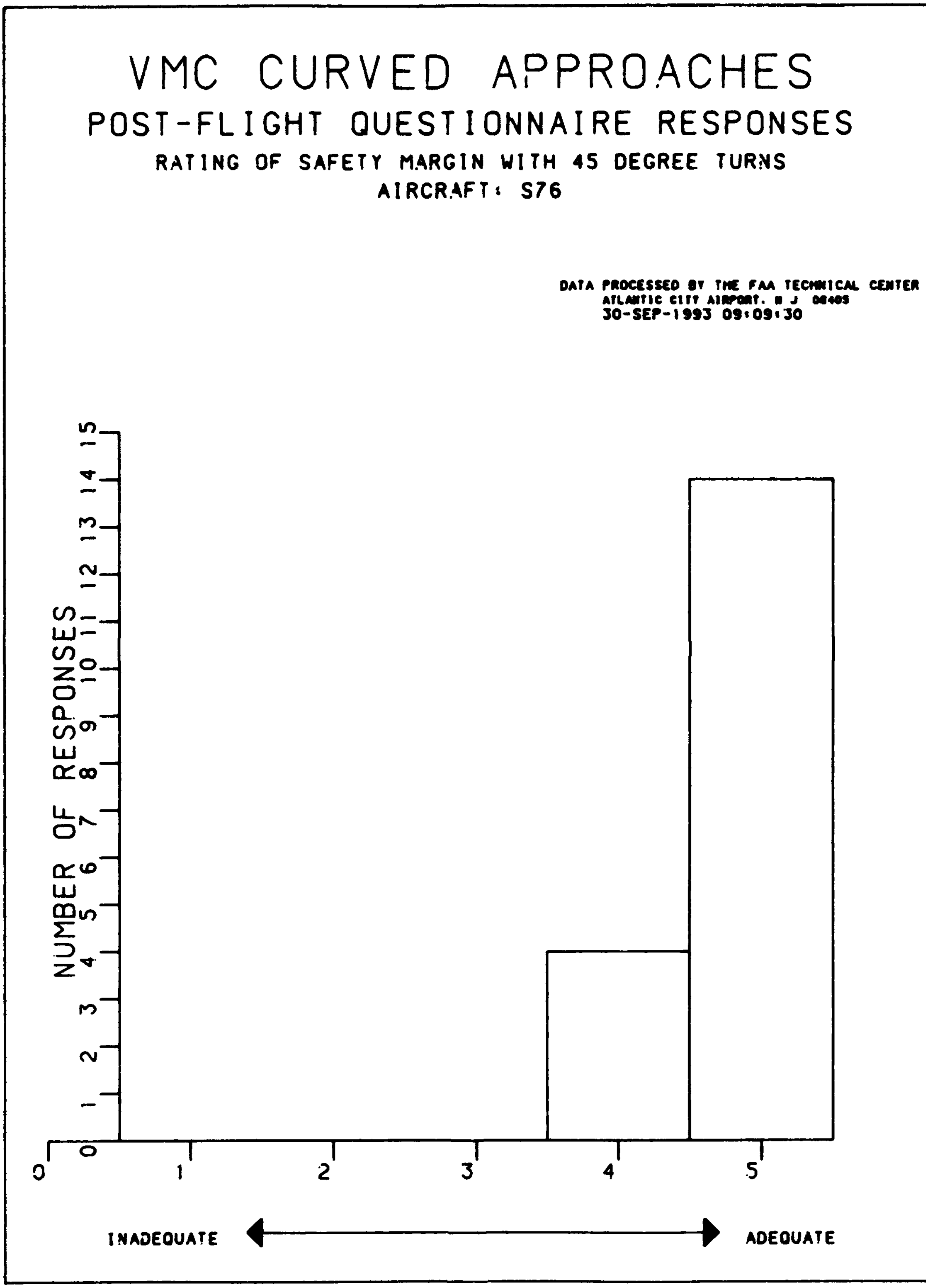
VMC CURVED APPROACHES

POST-FLIGHT QUESTIONNAIRE RESPONSES

OVERALL RATING OF 180 DEGREE TURNS

AIRCRAFT: S76




VMC CURVED APPROACHES
POST-FLIGHT QUESTIONNAIRE RESPONSES
RATING OF SAFETY MARGIN WITH 45 DEGREE TURNS
AIRCRAFT: S76
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 09:09:30
NUMBER OF RESPONSES
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
INADEQUATE
ADEQUATE

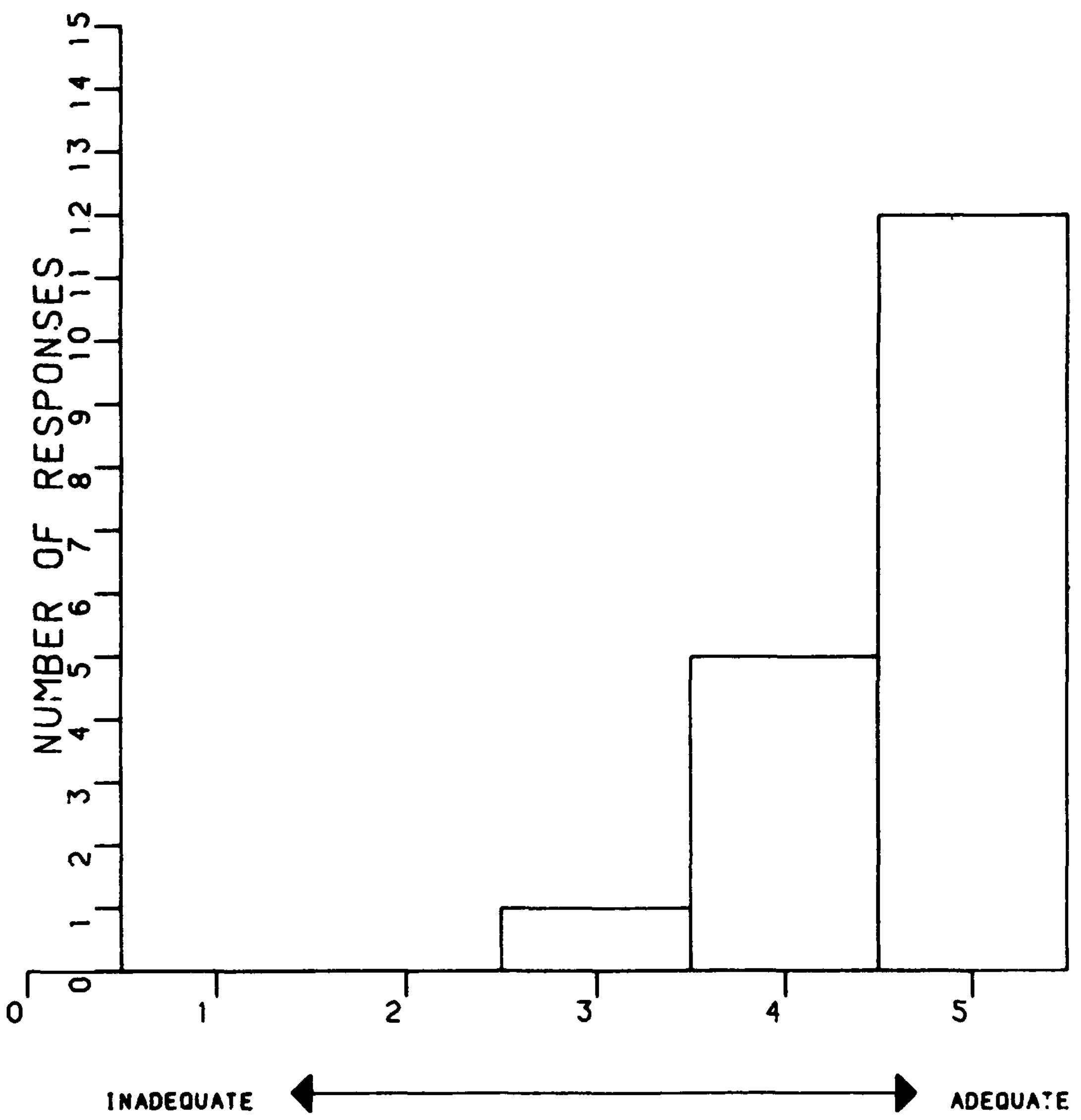
VMC CURVED APPROACHES

POST-FLIGHT QUESTIONNAIRE RESPONSES

RATING OF SAFETY MARGIN WITH 90 DEGREE TURNS

AIRCRAFT: S76

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 09:10:27



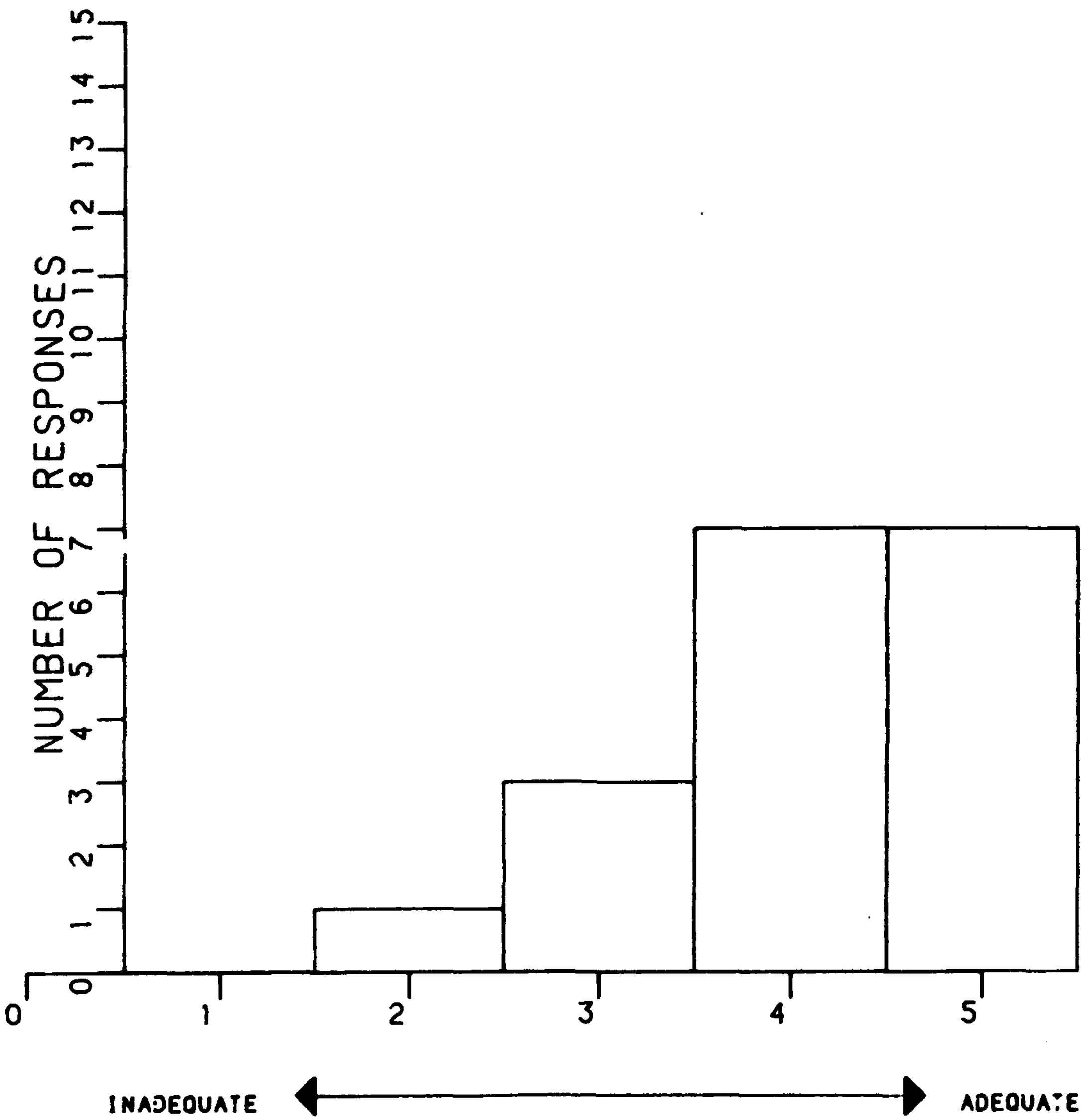
VMC CURVED APPROACHES

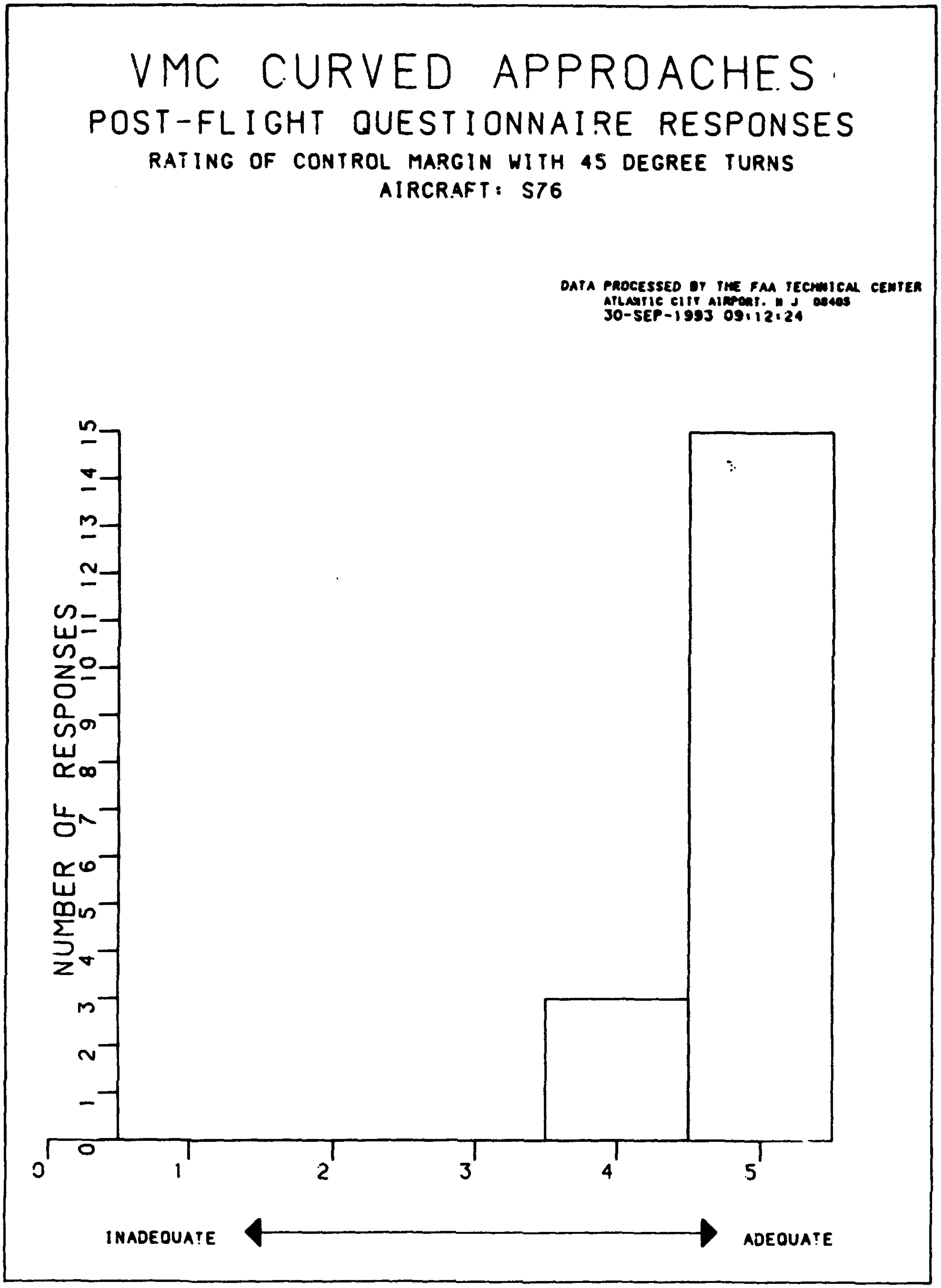
POST-FLIGHT QUESTIONNAIRE RESPONSES

RATING OF SAFETY MARGIN WITH 180 DEGREE TURNS

AIRCRAFT: S76

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 09:11:26





VMC CURVED APPROACHES
POST-FLIGHT QUESTIONNAIRE RESPONSES
RATING OF CONTROL MARGIN WITH 45 DEGREE TURNS
AIRCRAFT: S76
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 09:12:24
NUMBER OF RESPONSES
0
1
2
3
4
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12
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14
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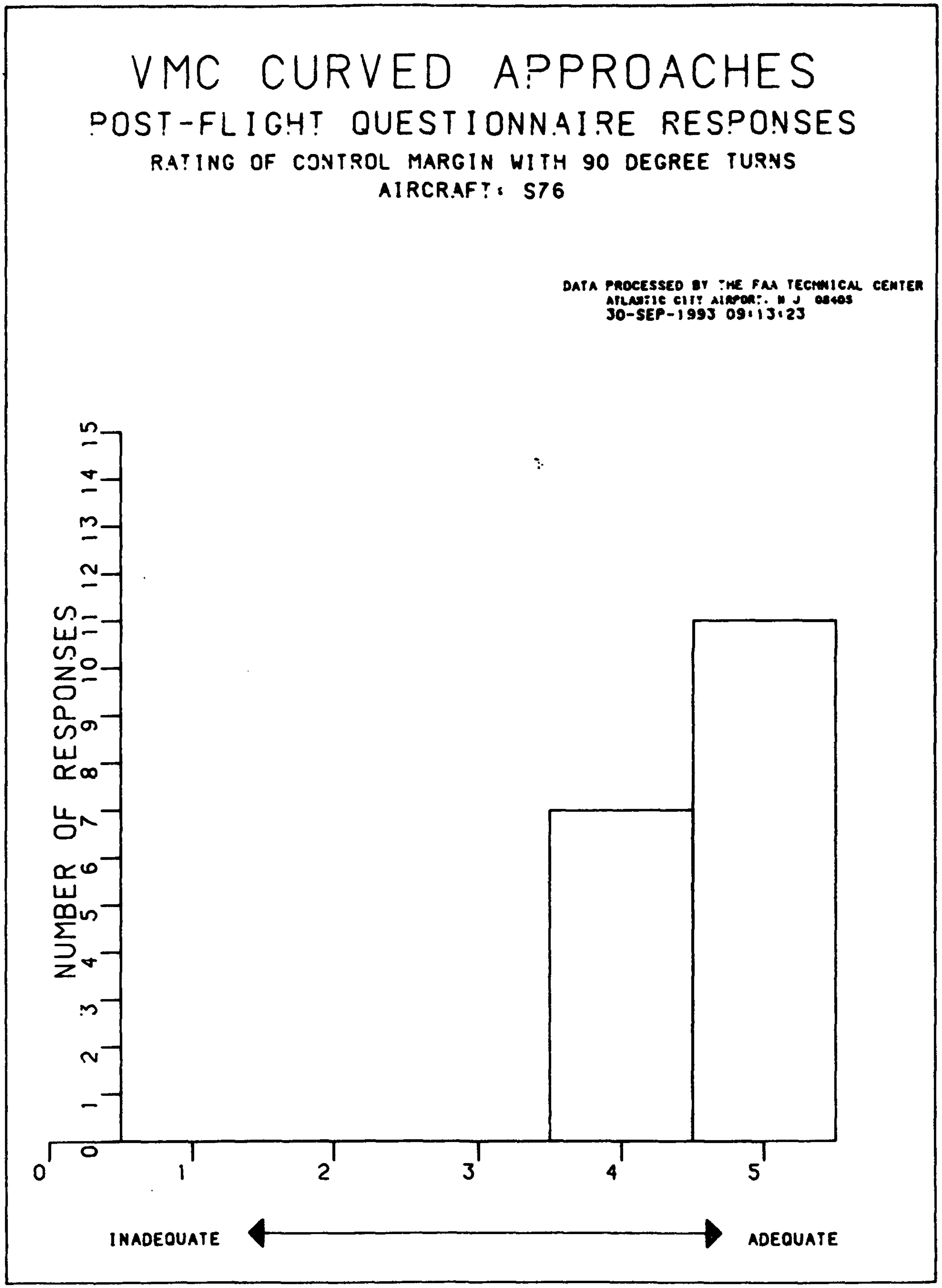
2
3
4
5
INADEQUATE
ADEQUATE


VMC CURVED APPROACHES
POST-FLIGHT QUESTIONNAIRE RESPONSES
RATING OF CONTROL MARGIN WITH 90 DEGREE TURNS
AIRCRAFT: S76
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 09:13:23
NUMBER OF RESPONSES
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
0 1 2 3 4 5
INADEQUATE
ADEQUATE

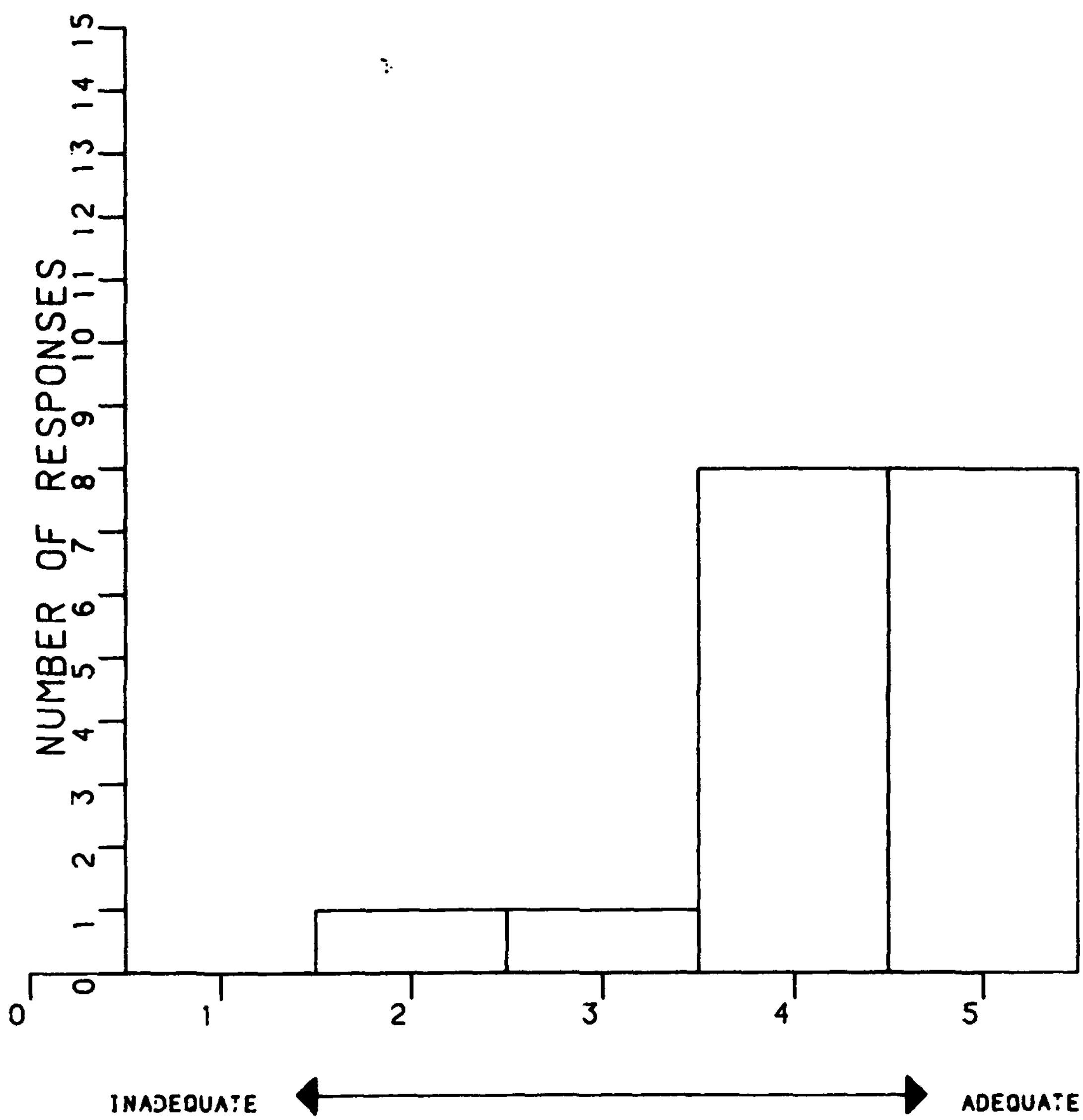
VMC CURVED APPROACHES

POST-FLIGHT QUESTIONNAIRE RESPONSES

RATING OF CONTROL MARGIN WITH 180 DEGREE TURNS

AIRCRAFT: S76

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 09:14:23

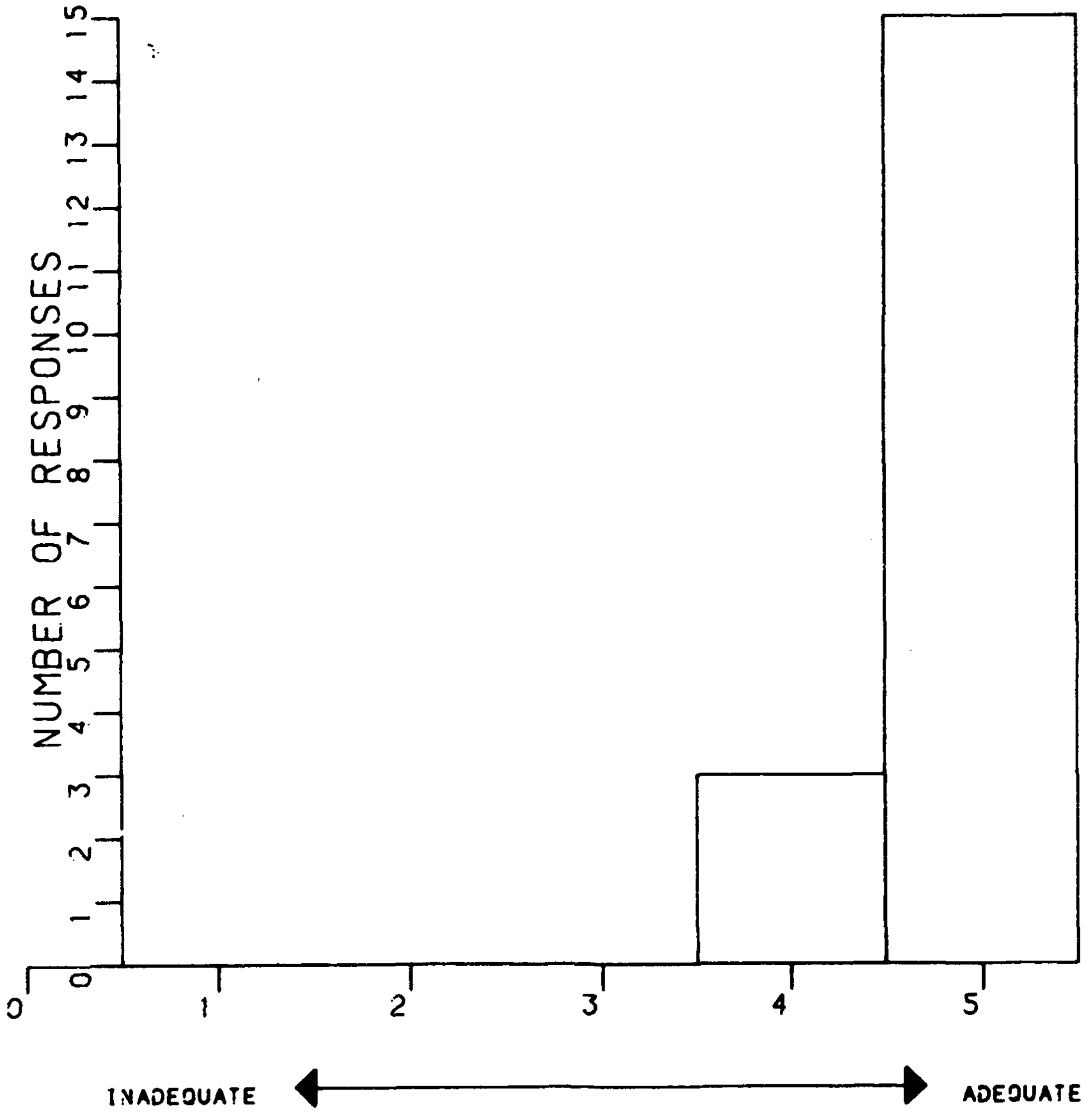


VMC CURVED APPROACHES

POST-FLIGHT QUESTIONNAIRE RESPONSES

RATING OF WORKLOAD WITH 45 DEGREE TURNS
AIRCRAFT: S76

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 09:15:22

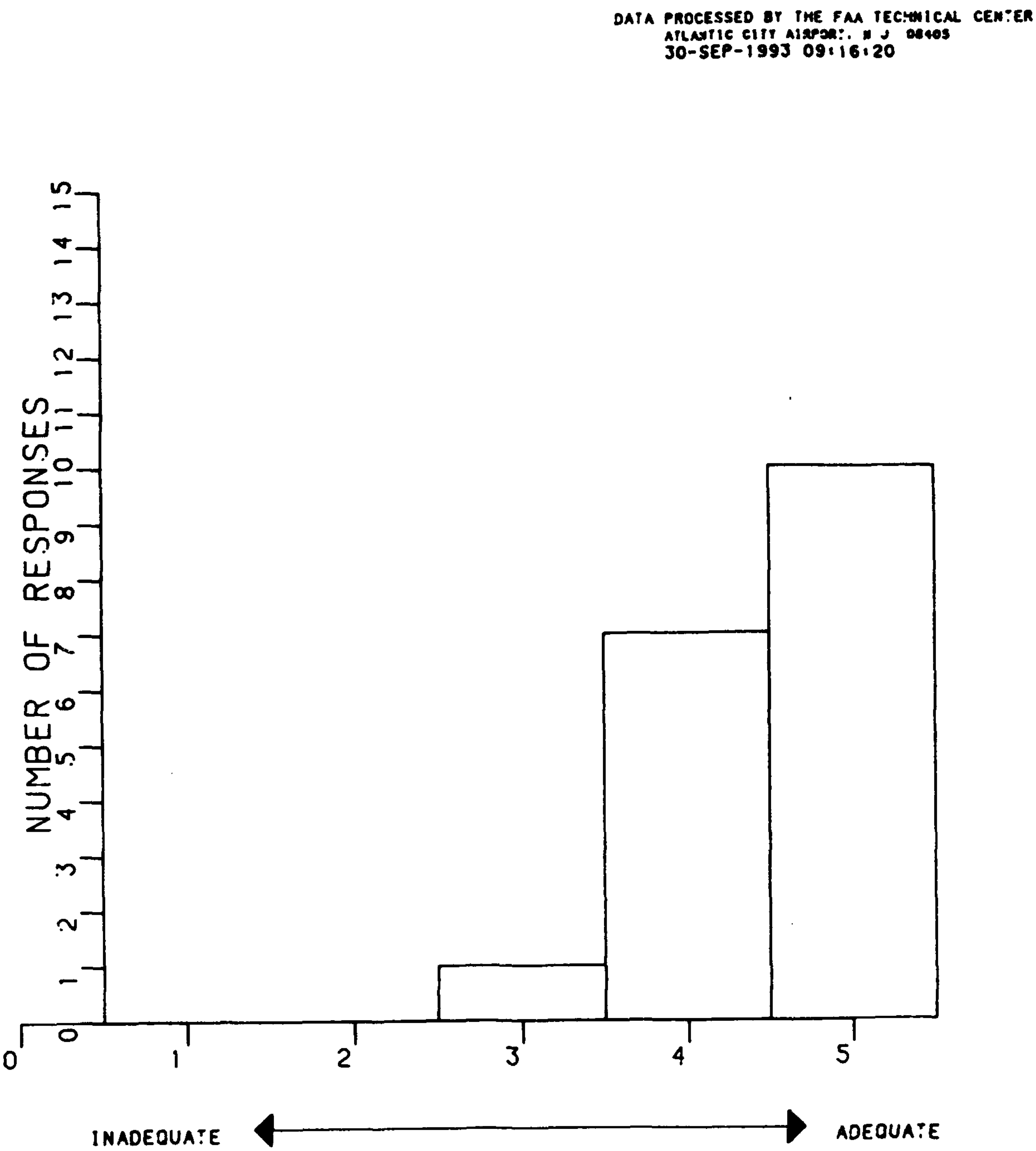


VMC CURVED APPROACHES

POST-FLIGHT QUESTIONNAIRE RESPONSES

RATING OF WORKLOAD WITH 90 DEGREE TURNS

AIRCRAFT: S76

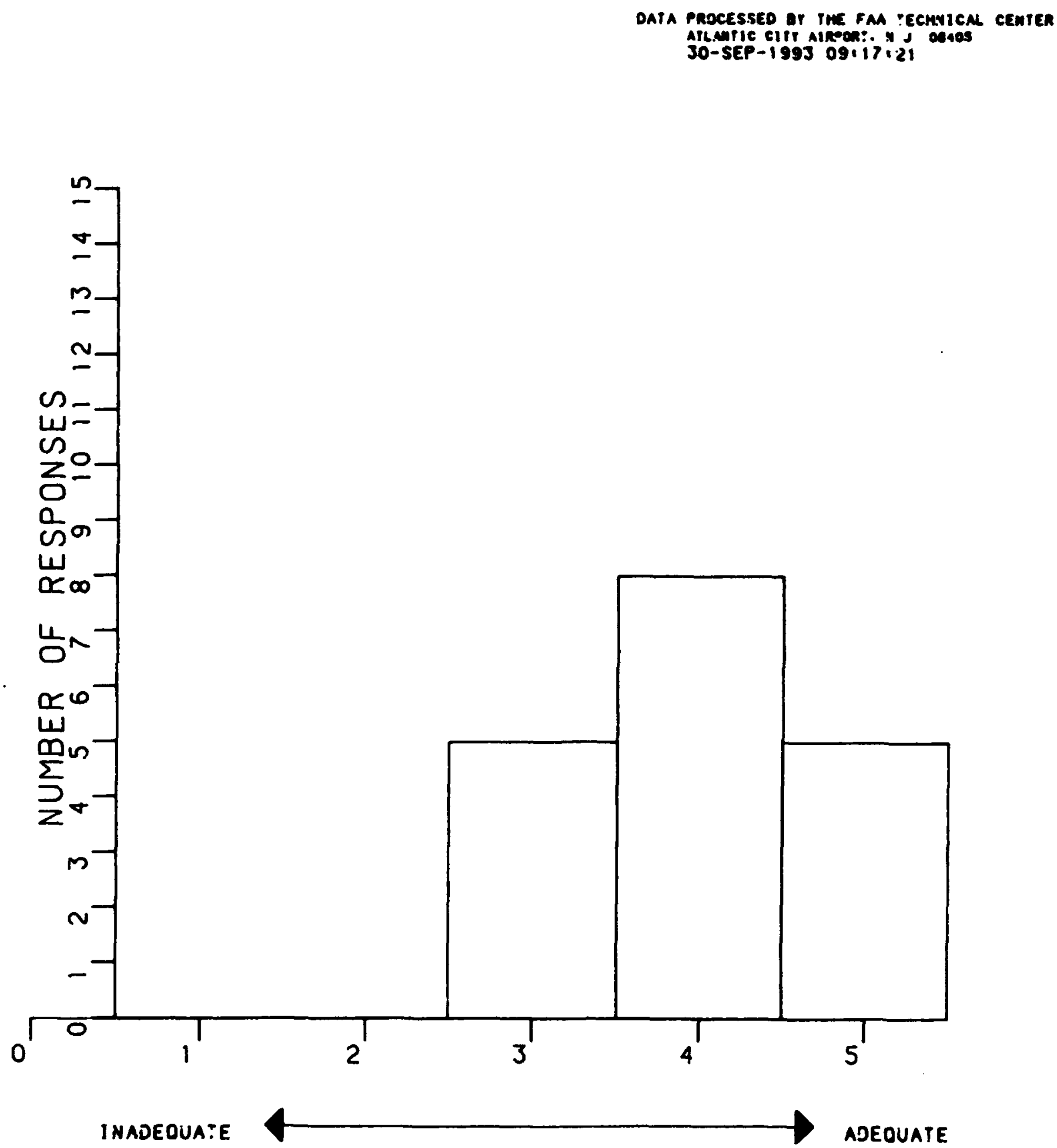


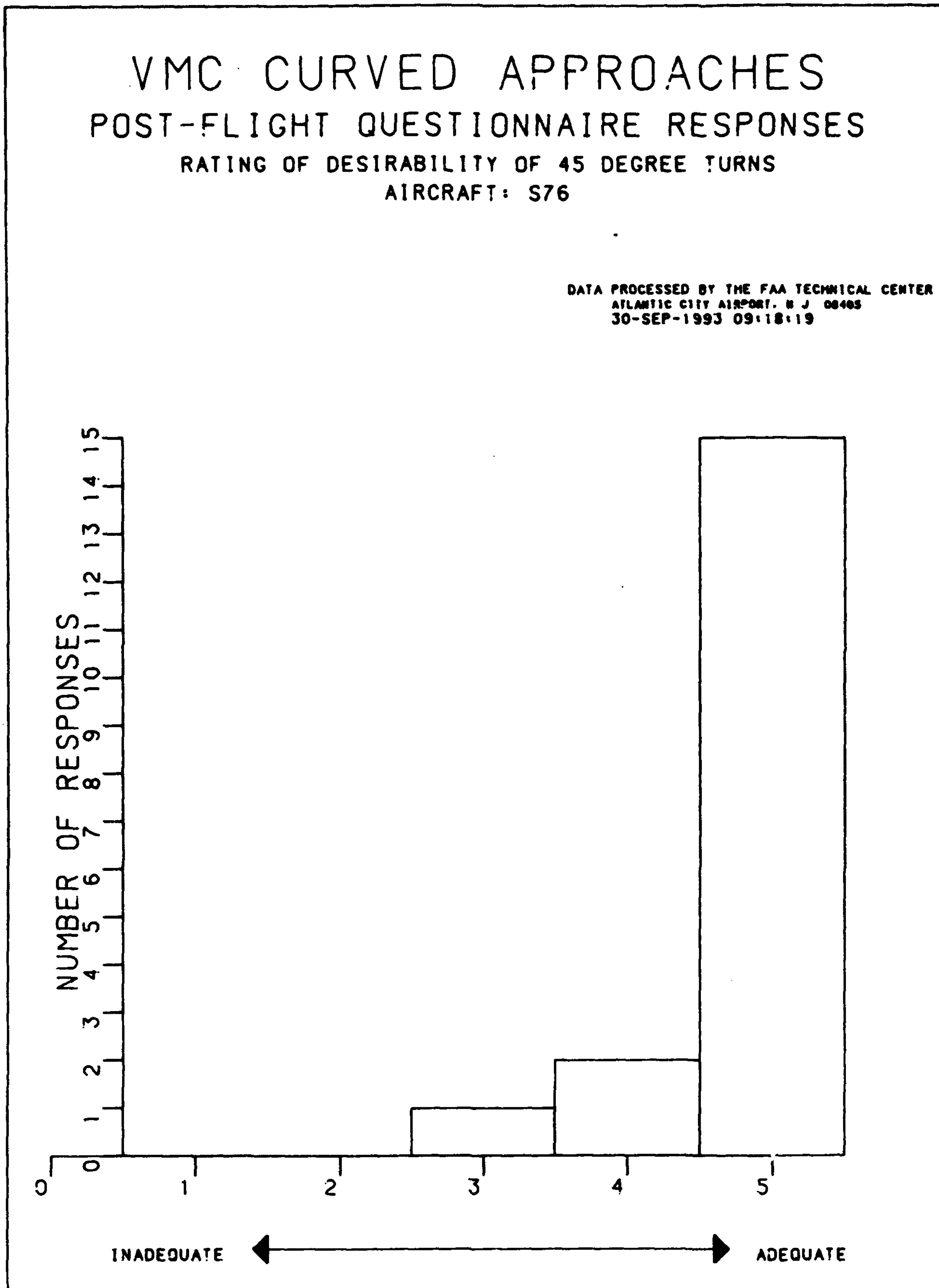
VMC CURVED APPROACHES

POST-FLIGHT QUESTIONNAIRE RESPONSES

RATING OF WORKLOAD WITH 180 DEGREE TURNS

AIRCRAFT: S76




VMC CURVED APPROACHES
POST-FLIGHT QUESTIONNAIRE RESPONSES
RATING OF DESIRABILITY OF 45 DEGREE TURNS
AIRCRAFT: S76
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 09:18:19
NUMBER OF RESPONSES
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1
2
3
4
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2
3
4
5
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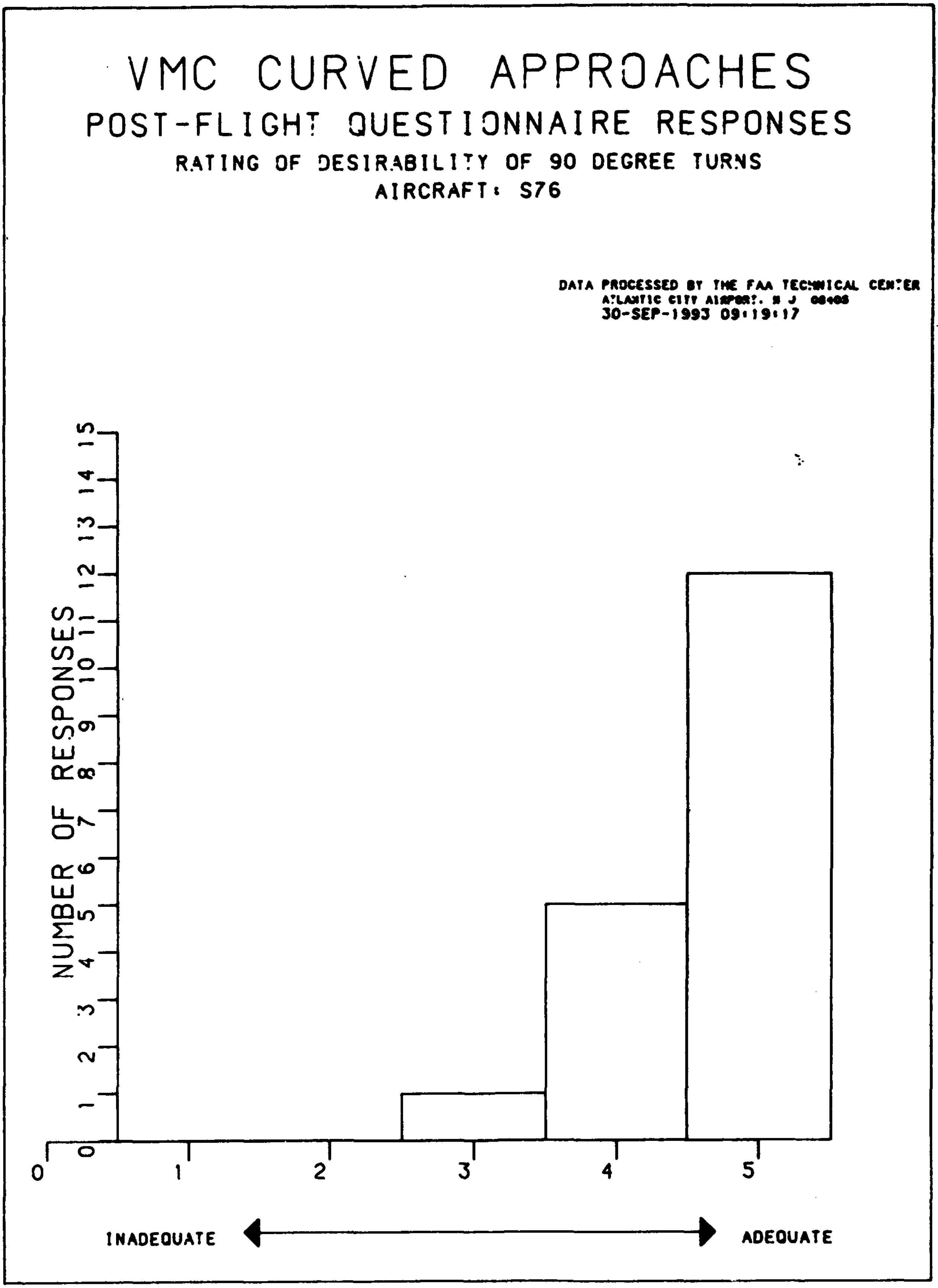
ADEQUATE



VMC CURVED APPROACHES
POST-FLIGHT QUESTIONNAIRE RESPONSES
RATING OF DESIRABILITY OF 90 DEGREE TURNS
AIRCRAFT: S76
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J
30-SEP-1993 09:19:17
NUMBER OF RESPONSES
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3
4
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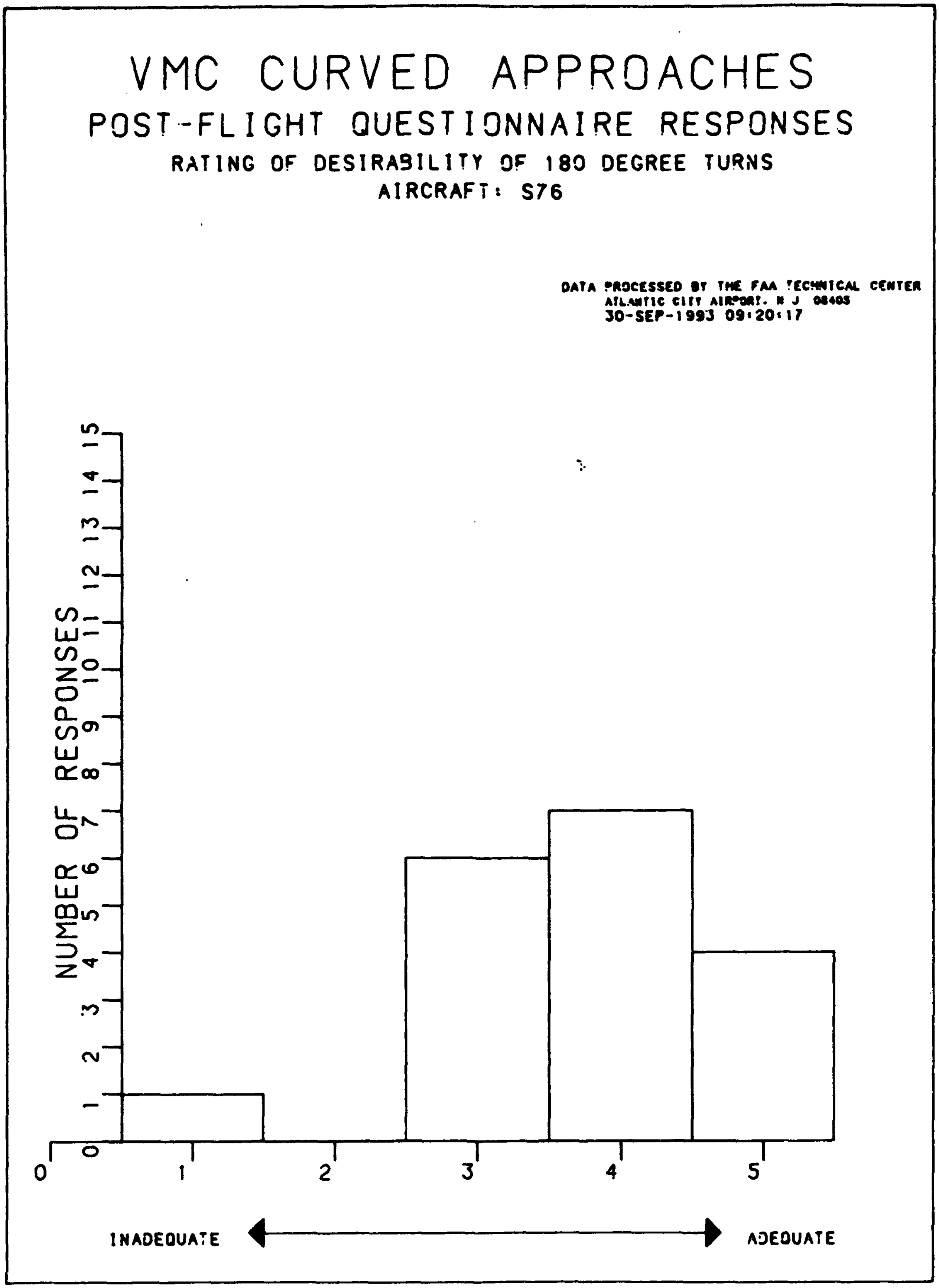
ADEQUATE



VMC CURVED APPROACHES
POST-FLIGHT QUESTIONNAIRE RESPONSES
RATING OF DESIRABILITY OF 180 DEGREE TURNS
AIRCRAFT: S76
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 09:20:17
NUMBER OF RESPONSES
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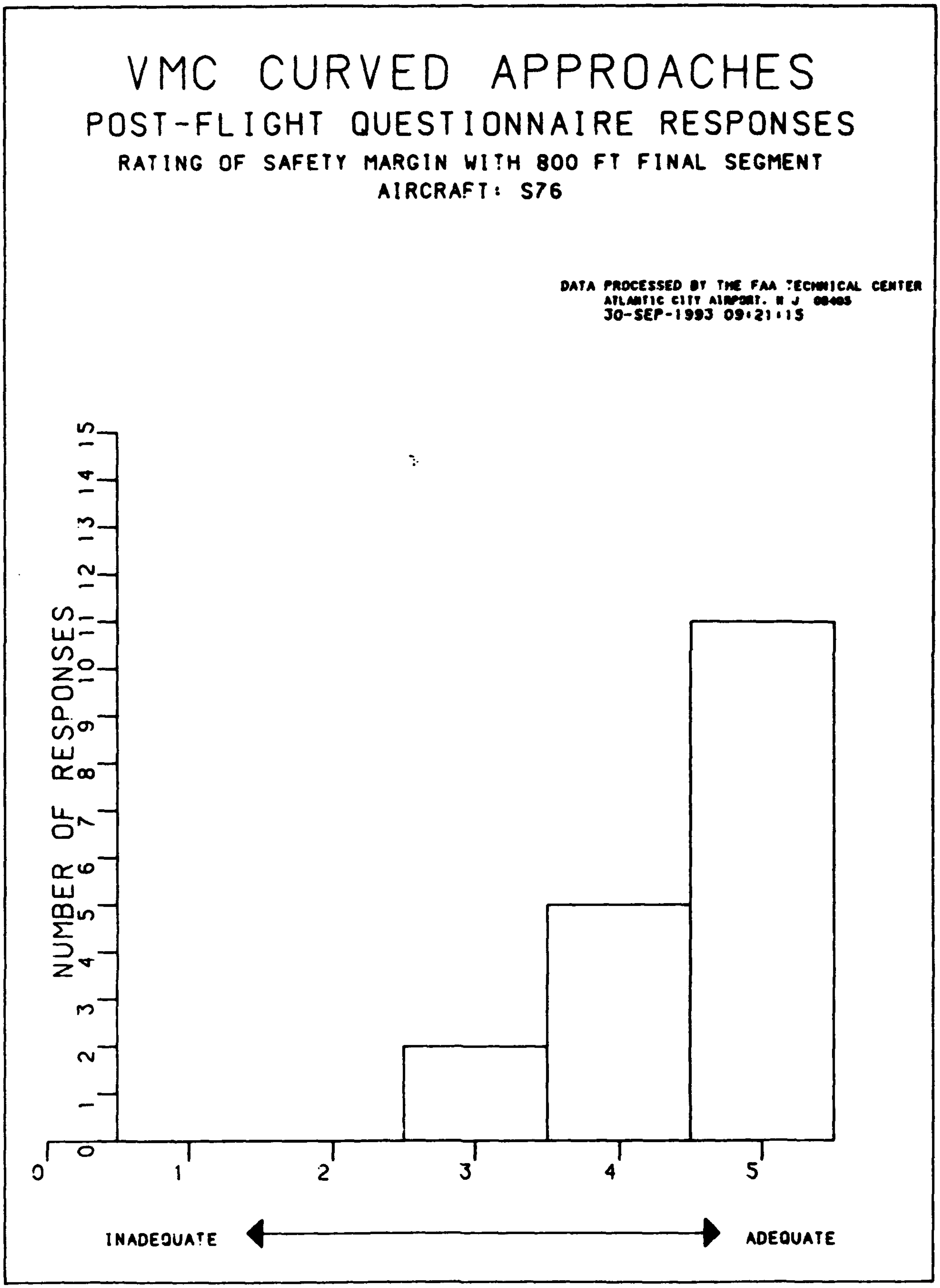
INADEQUATE
ADEQUATE


VMC CURVED APPROACHES
POST-FLIGHT QUESTIONNAIRE RESPONSES
RATING OF SAFETY MARGIN WITH 800 FT FINAL SEGMENT
AIRCRAFT: S76
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 09:21:15
NUMBER OF RESPONSES
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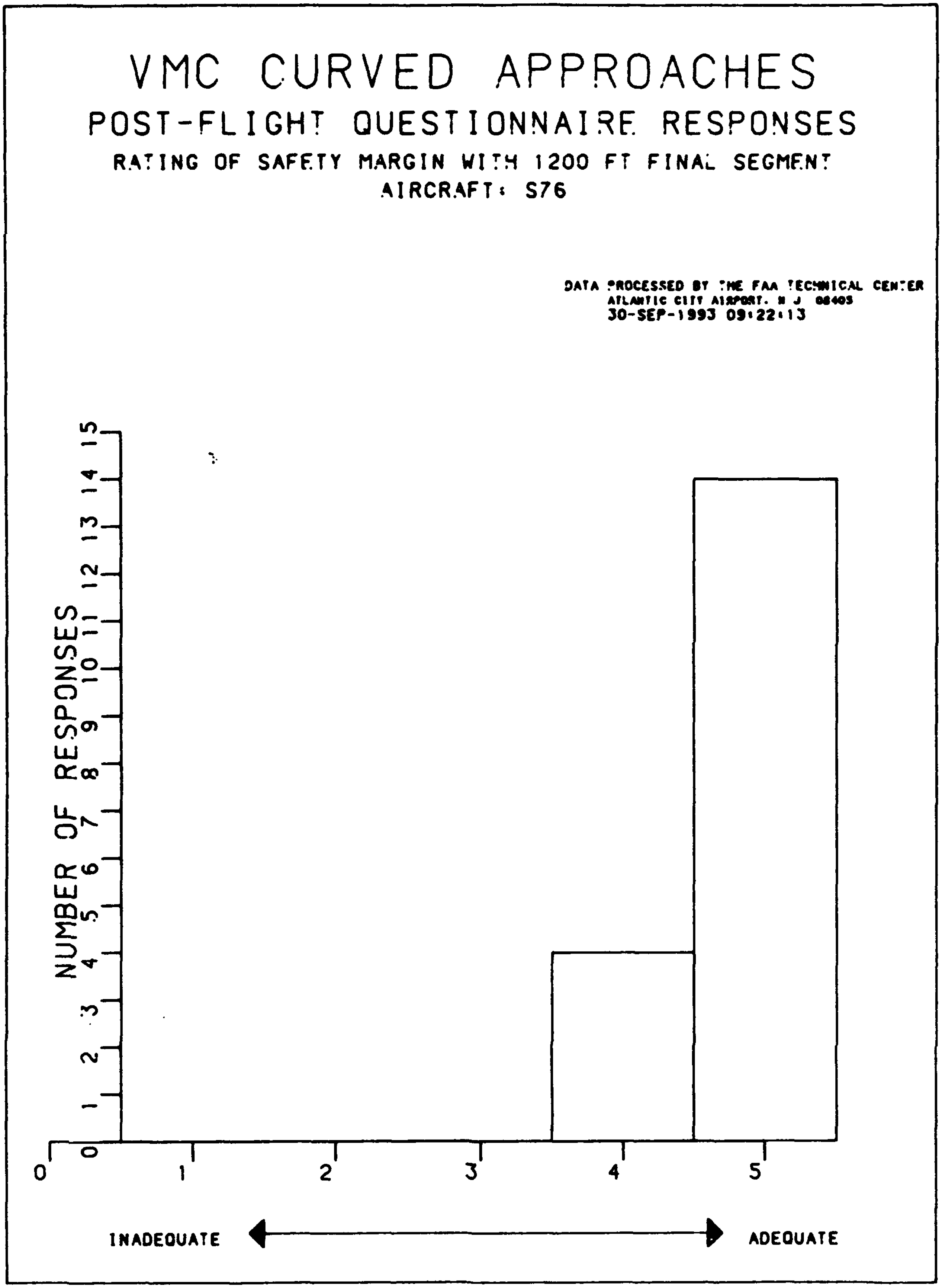
5
INADEQUATE
ADEQUATE


VMC CURVED APPROACHES
POST-FLIGHT QUESTIONNAIRE RESPONSES
RATING OF SAFETY MARGIN WITH 1200 FT FINAL SEGMENT
AIRCRAFT: S76
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 09:22:13
NUMBER OF RESPONSES
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3
4
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2
3
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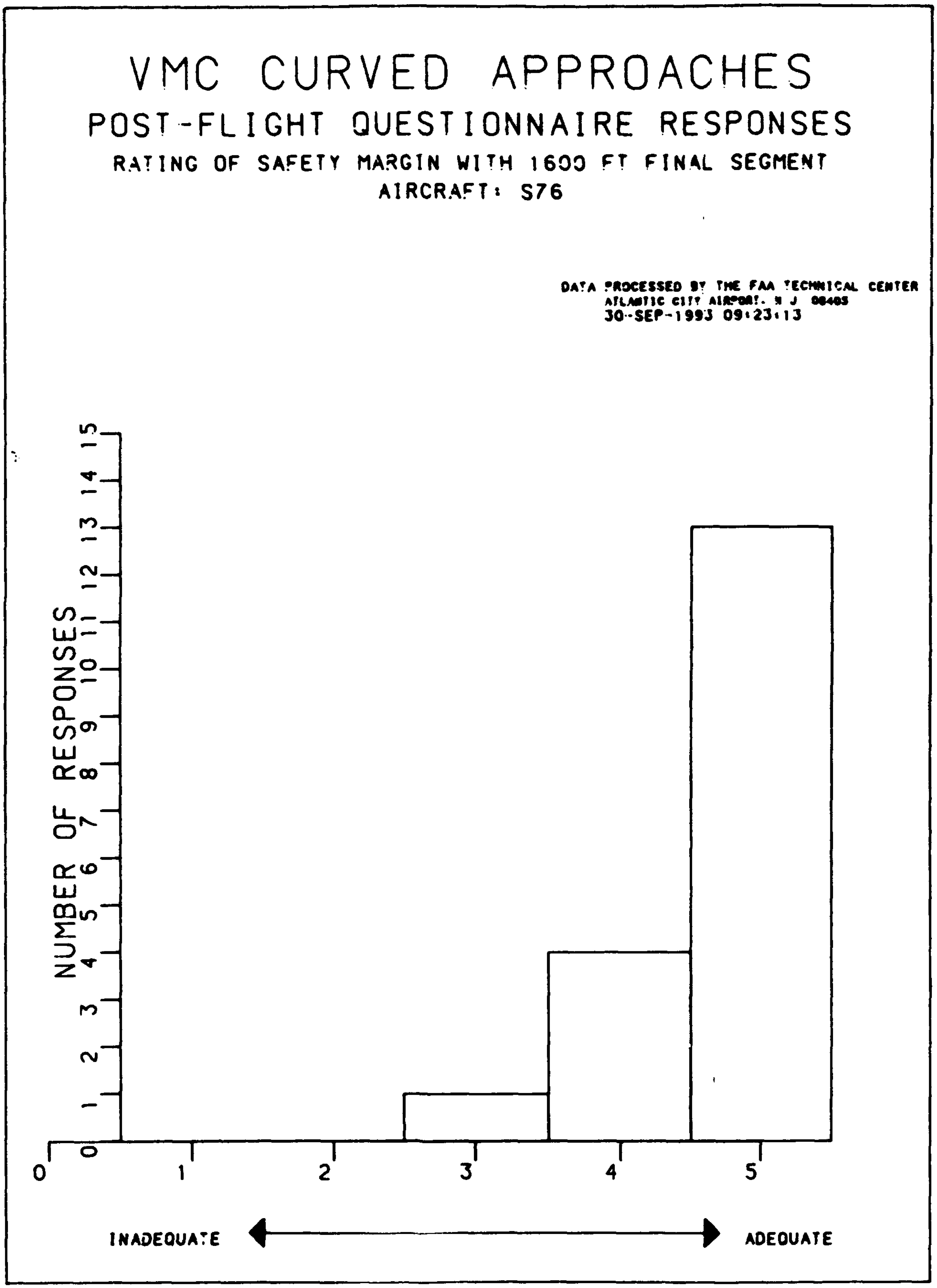
5
INADEQUATE
ADEQUATE


VMC CURVED APPROACHES
POST-FLIGHT QUESTIONNAIRE RESPONSES
RATING OF SAFETY MARGIN WITH 1600 FT FINAL SEGMENT
AIRCRAFT: S76
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 09:23:13
NUMBER OF RESPONSES
0
1
2
3
4
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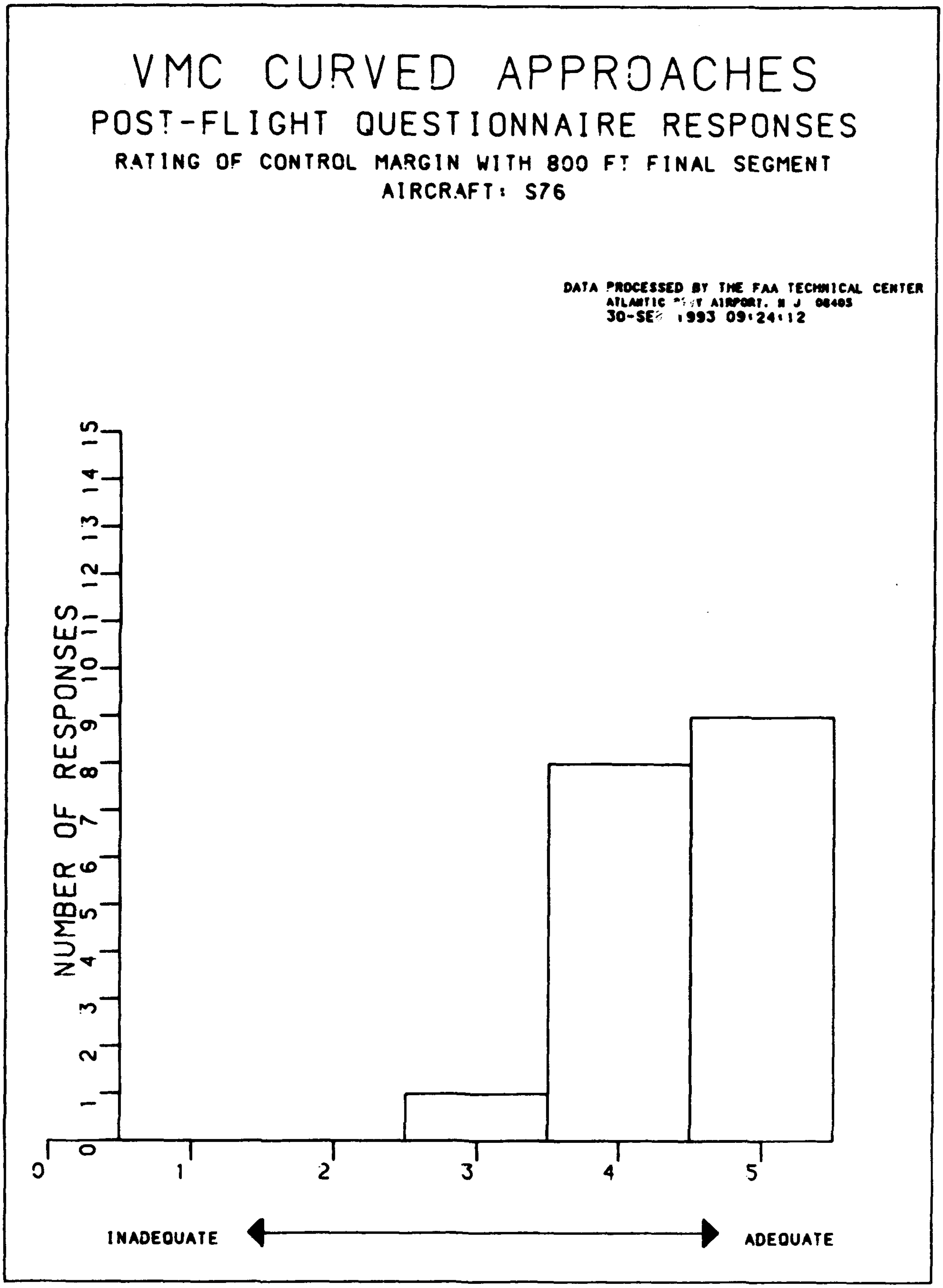
2
3
4
5
INADEQUATE
ADEQUATE


VMC CURVED APPROACHES
POST-FLIGHT QUESTIONNAIRE RESPONSES
RATING OF CONTROL MARGIN WITH 800 FT FINAL SEGMENT
AIRCRAFT: S76
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP 1993 09:24:12
NUMBER OF RESPONSES
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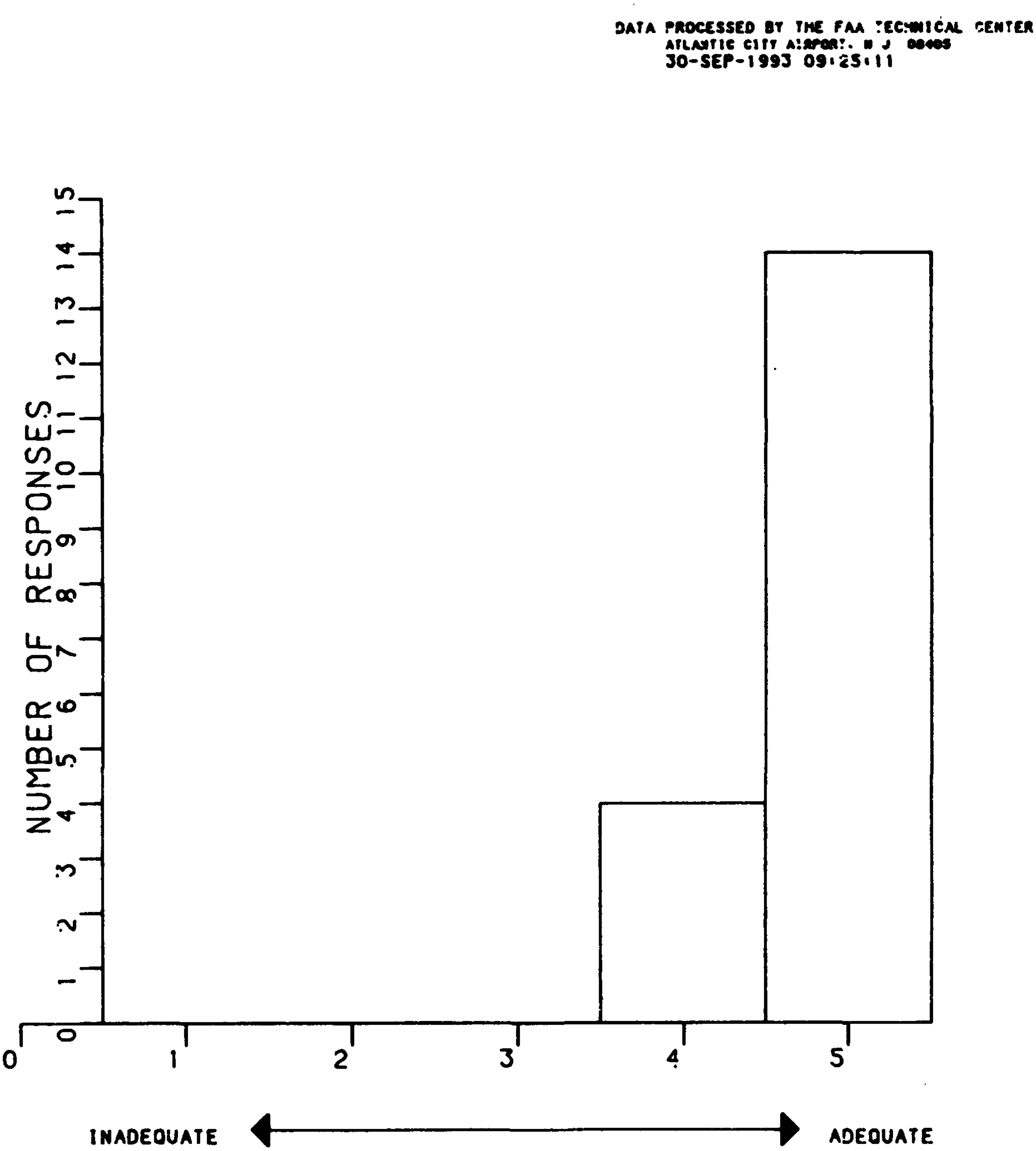
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
INADEQUATE
ADEQUATE

VMC CURVED APPROACHES

POST-FLIGHT QUESTIONNAIRE RESPONSES

RATING OF CONTROL MARGIN WITH 1200 FT FINAL SEGMENT

AIRCRAFT: S76

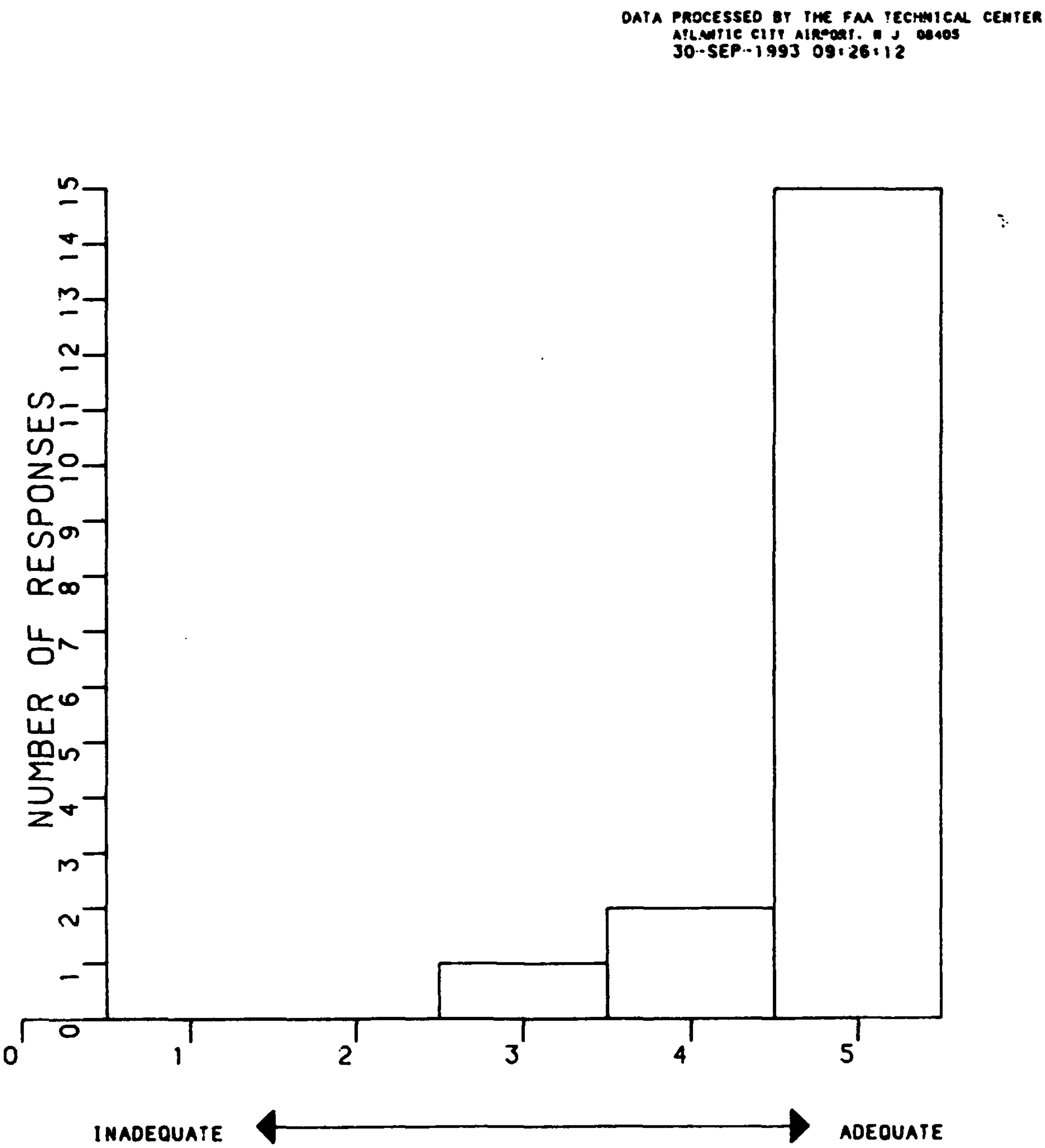


VMC CURVED APPROACHES

POST-FLIGHT QUESTIONNAIRE RESPONSES

RATING OF CONTROL MARGIN WITH 1600 FT FINAL SEGMENT

AIRCRAFT: S76

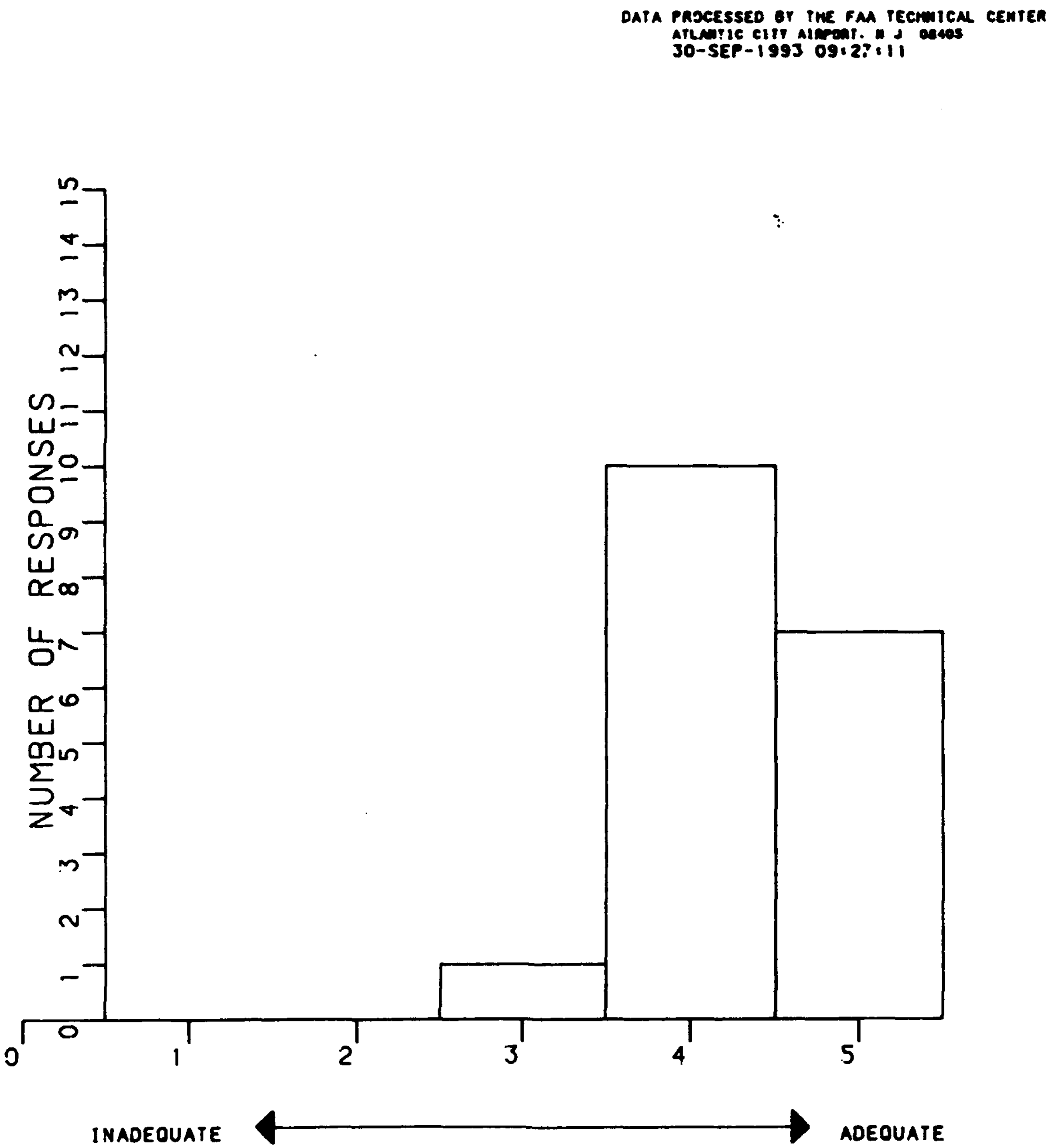


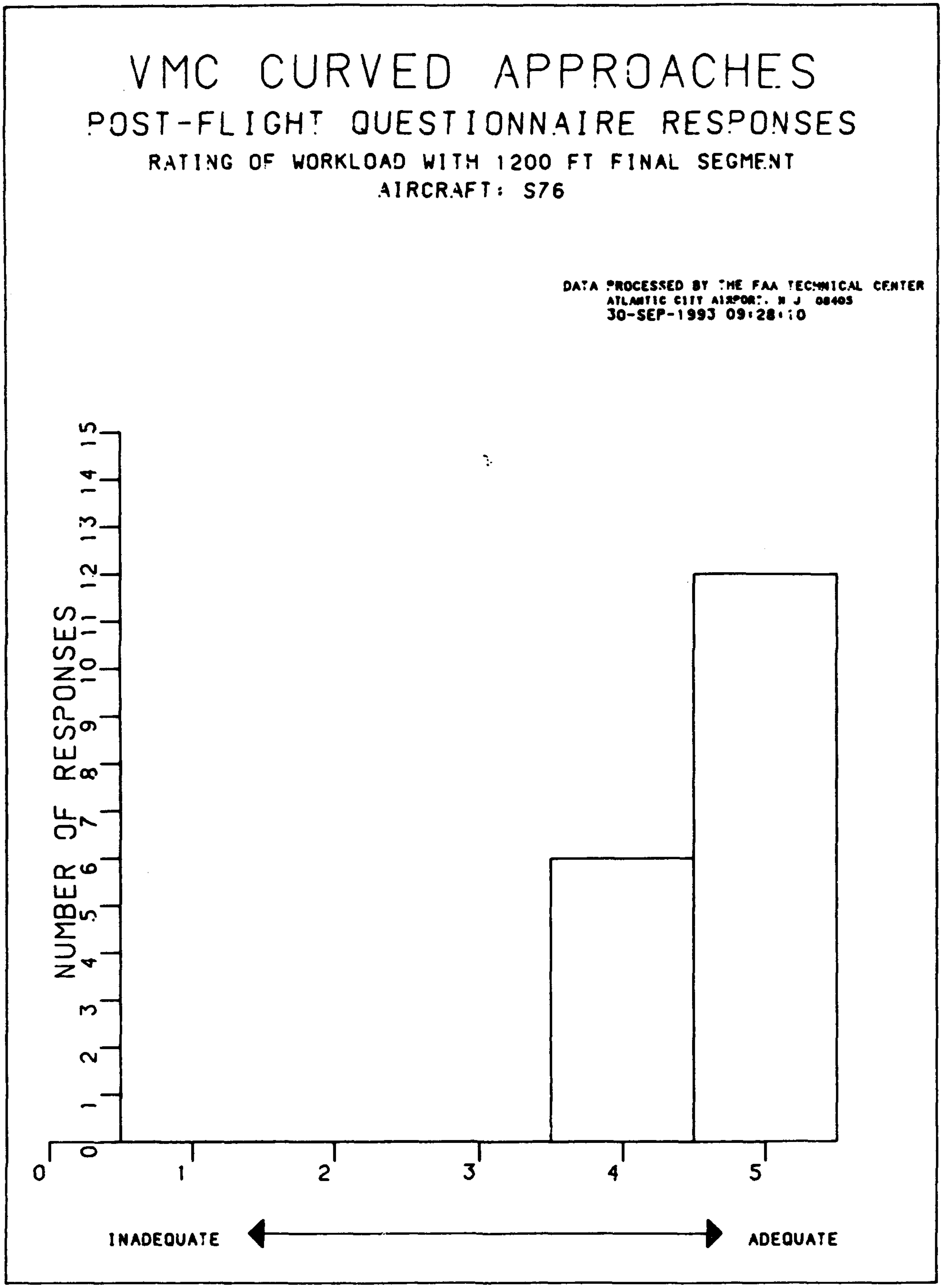
VMC CURVED APPROACHES

POST-FLIGHT QUESTIONNAIRE RESPONSES

RATING OF WORKLOAD WITH 800 FT FINAL SEGMENT

AIRCRAFT: S76




VMC CURVED APPROACHES
POST-FLIGHT QUESTIONNAIRE RESPONSES
RATING OF WORKLOAD WITH 1200 FT FINAL SEGMENT
AIRCRAFT: S76
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 09:28:10
NUMBER OF RESPONSES
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4
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6
7
8
9
10
11
12
13
14
15
0
1
2
3
4
5
INADEQUATE
ADEQUATE

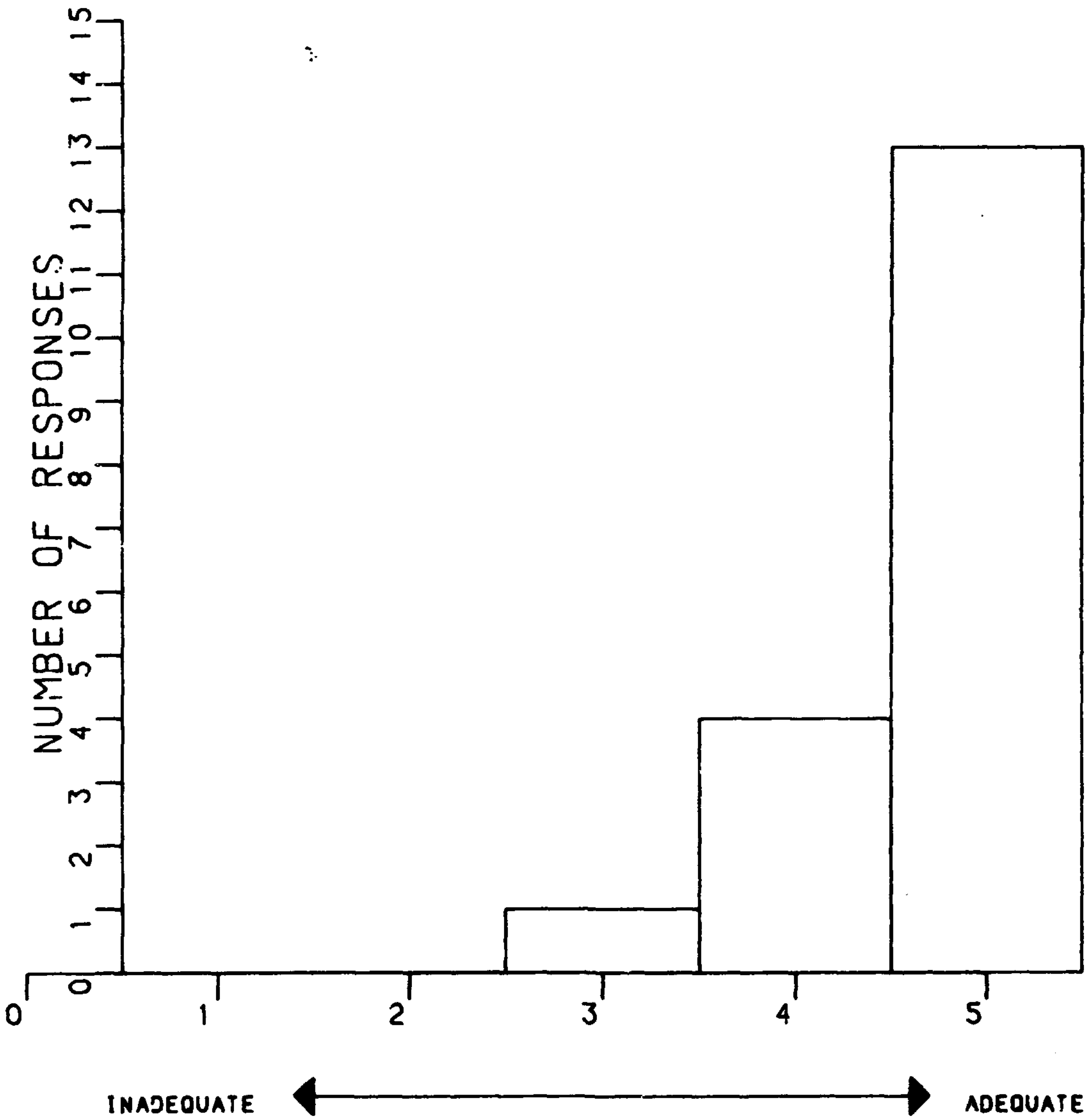
VMC CURVED APPROACHES

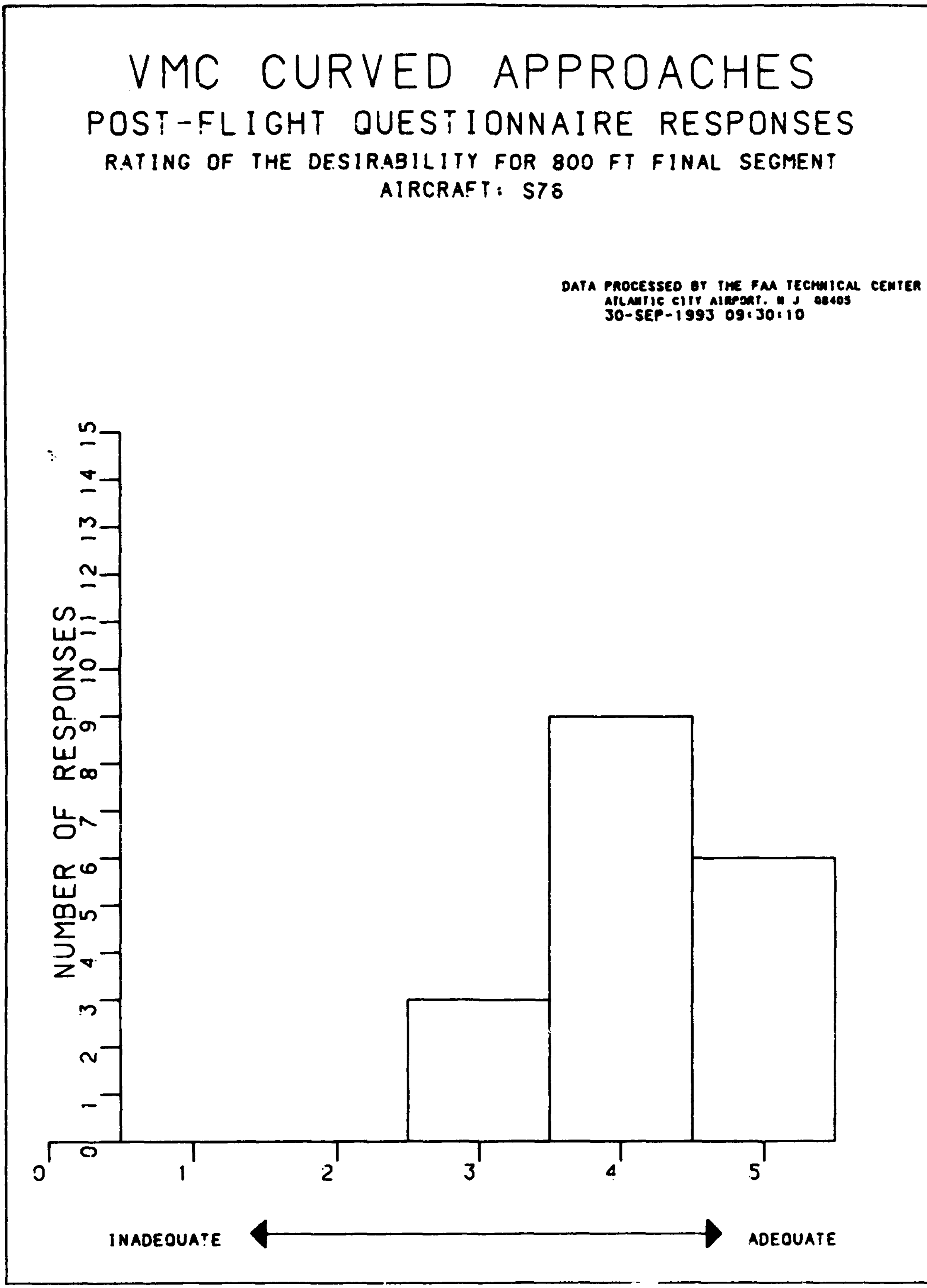
POST-FLIGHT QUESTIONNAIRE RESPONSES

RATING OF WORKLOAD WITH 1600 FT FINAL SEGMENT

AIRCRAFT: S76

DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 09:29:11




VMC CURVED APPROACHES
POST-FLIGHT QUESTIONNAIRE RESPONSES
RATING OF THE DESIRABILITY FOR 800 FT FINAL SEGMENT
AIRCRAFT: S76
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 09:30:10
NUMBER OF RESPONSES
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6
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13
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15
0
1
2
3
4
5
INADEQUATE
ADEQUATE

VMC CURVED APPROACHES

POST-FLIGHT QUESTIONNAIRE RESPONSES

RATING OF THE DESIRABILITY FOR 1200 FT FINAL SEGMENT

AIRCRAFT: S76

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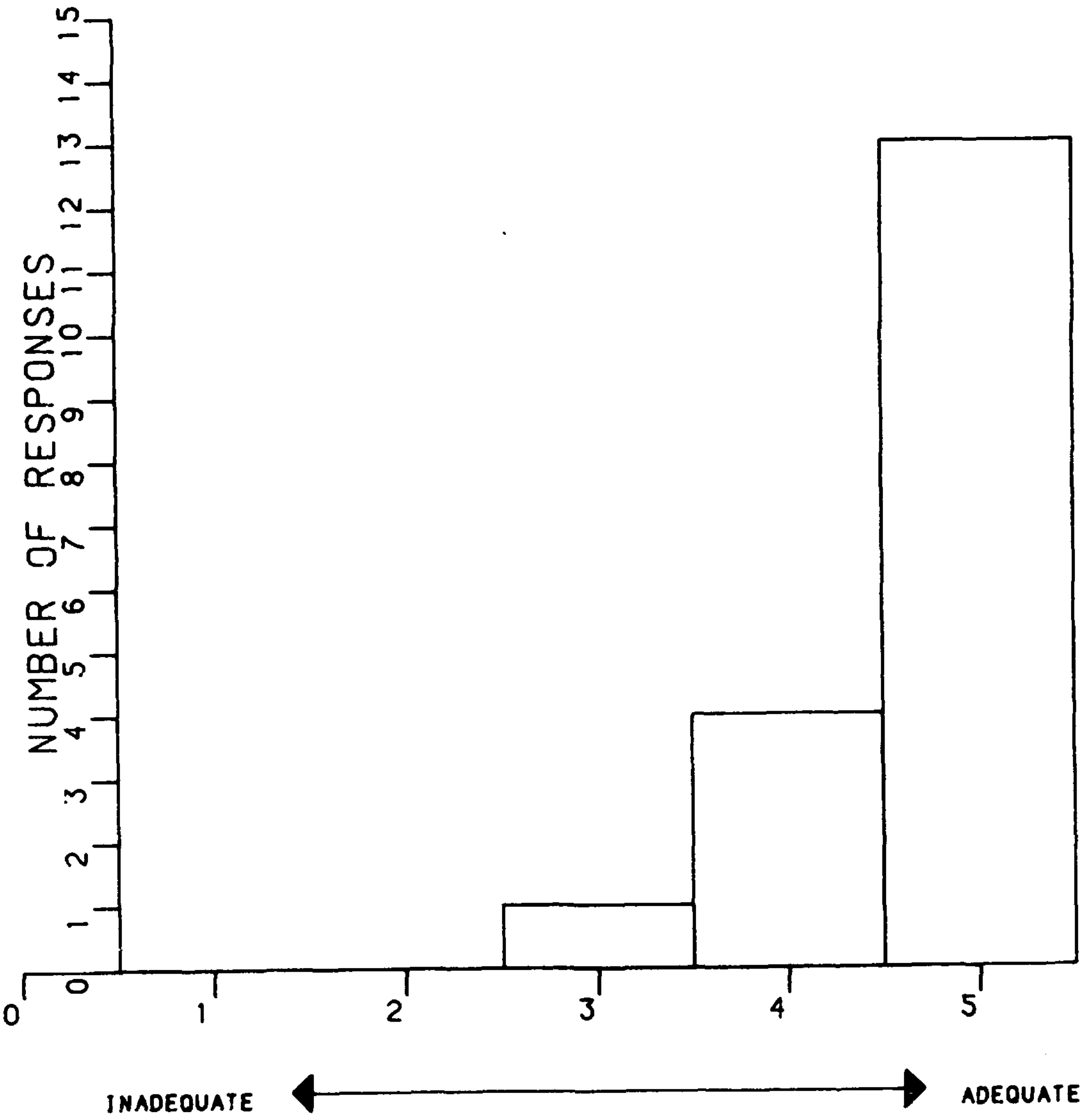
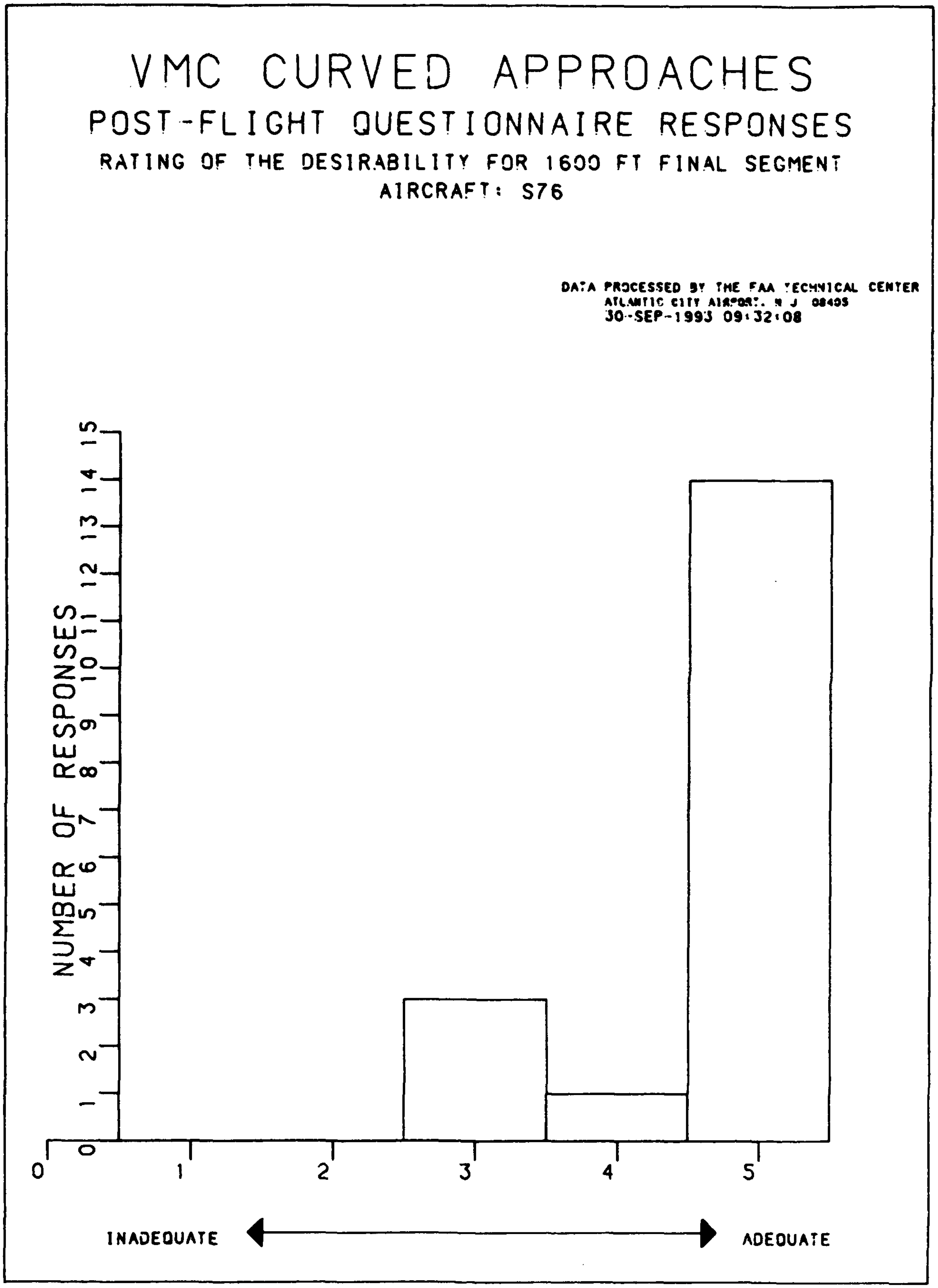
30-SEP-1993 09:31:08




VMC CURVED APPROACHES
POST-FLIGHT QUESTIONNAIRE RESPONSES
RATING OF THE DESIRABILITY FOR 1600 FT FINAL SEGMENT
AIRCRAFT: S76
DATA PROCESSED BY THE FAA TECHNICAL CENTER
ATLANTIC CITY AIRPORT, N J 08405
30-SEP-1993 09:32:08
NUMBER OF RESPONSES
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4
5
6
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9
10
11
12
13
14
15
0
1
2
3
4
5
INADEQUATE
ADEQUATE

APPENDIX H
COMPARISONS OF LEFT VERSUS RIGHT TURN ENVELOPES

A Comparison of Left Turn versus Right Turn Airspace Envelopes

Summary Table for S-76 Radial Error (Left Turns)
4 and 6 Standard Deviation Envelopes
(Table 4 from Report FAA/CT-TN92/46)

Estimated Largest Deviation (in feet)/Position in Turn (degrees)

Turn Angle	Final Segment 800	1200	1600
	+- 4 Standard Deviations		
45	+- 550/20	+- 450/22	+- 450/22
90	+- 650/40	+- 750/40	+- 550/40
180	+-1200/90	+-1275/90	+-1200/90
	+- 6 Standard Deviations		
45	+- 800/20	+- 650/22	+- 675/22
90	+- 975/40	+- 825/40	+- 800/40
180	+-1750/90	+-1900/90	+-1725/90

Summary Table for Radial Errors (Right Turns)
4 and 6 standard Deviation Envelopes
(Table 4 from this report)

Estimated Largest Deviation (in Feet)/Position in Turn (degree)

Turn Angle	Final Segment 800	1200	1600
	+- 4 Standard Deviations		
45	+- 380/12	+- 325/10	+- 225/5
90	+- 605/10	+- 650/30	+- 425/35
180	+- 850/90	+- 940/90	+- 600/100
	+- 6 Standard Deviations		
45	+- 575/12	+- 480/10	+- 350/5
90	+- 905/10	+- 950/30	+- 650/35
180	+-1275/90	+-1410/90	+- 900/100

Summary Table for S-76 Crosstrack Error (Left Turns)
4 and 6 Standard Deviation Envelopes
(Table 6 from Report FAA/CT-TN92/46)

Estimated Maximum Deviation (in feet)
Widest Portion/Narrowest Portion

Turn Angle	Final Segment 800	1200	1600
	+- 4 Standard Deviations		
45	+-225/+-150	+-275/+-150	+-275/+-150
90	+-250/+-150	+-250/+-150	+-325/+-150
180	+-150/+-150	+-250/+-150	+-250/+-150
	+- 6 Standard Deviations		
45	+-350/+-250	+-400/+-200	+-400/+-200
90	+-350/+-225	+-275/+-225	+-500/+-225
180	+-250/+-225	+-375/+-200	+-375/+-200

Summary Table for Crosstrack Errors (Right Turns)
4 and 6 Standard Deviation Envelopes
(Table 5 from this report)

Estimated Maximum Deviation (in feet)
Widest Portion/Narrowest Portion

Turn Angle	Final Segment 800	1200	1600
	+- 4 Standard Deviations		
45	+-100/+-70	+-135/+-90	+-155/+-90
90	+-110/+-65	+-150/+-75	+-150/+-65
180	+-155/+-75	+-145/+-75	+-305/+-75
	+- 6 Standard Deviations		
45	+-150/+-100	+-210/+-135	+-230/+-130
90	+-170/+-100	+-225/+-115	+-225/+-100
180	+-230/+-115	+-215/+-115	+-460/+-115

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